$3.15

Book of Collections X

V 1 oCi

Property of Michael Nee
Herbarium, Birge Hall
Botany Department
University of WISCONSIN
MADISON, WISCONSIN 53706
EE.UU.

Class of

#6511 - #8680
Aug. 8, 1973 - Dec. 6, 1973

NATIONAL 56-907
Made in U. S. A.

Index Herbariorum

MO Missouri Botanical Garden, St. Louis, Missouri. The first set to be retained, the ~~rest~~ duplicates distributed, except lichens & liverworts.

US U.S. National Museum, Smithsonian Inst., Washington, DC. All lichens are to go to Mason Hale, the first set kept there & ~~rest~~ duplicates distributed.

F Field Museum (Chicago Natural History Museum), Chicago, Illinois. All liverworts sent here, first set kept & duplicates distributed.

MAD U.S.D.A. Forest Products Lab, Madison, Wisc. A set of all vouchers for wood specimens which I will deposit there.

MADw - their series of numbers for my wood specimens.

Notes:

The Solanaceae determinations by Bill D'Arcy are based on all the material, at MO before distribution. The other material det by somebody at MO but without any notes as to herbarium is probably also based on all the material before distribution of duplicates.

Determinations:

R. L. Ron Liesner of MO. Miscellaneous.
T. C. Thomas B. Croat of MO.
J. D. John Dwyer of MO, Rubiaceae
G. D. Garrett Davidse of MO, Gramineae
A. G. Alwyn Gentry of MO, Bignoniaceae
D. L. D. B. Lellinger of US, Ferns.
J. H. Jack Humbles, Scrophs.

Geographic Location.

Locations for Panamanian collections are as precise as possible. For labels, distance from nearest town or other landmark is given.

Unfortunately, the topographic maps available are not very useful for getting precise latitude-longitude readings. The U.S. Army Map Service, Corps of Engineers, topographic maps are the ones I will be using, specifically the -

1:50000 AMS Series E 761 (ca. 1950)
1:50000 Edition 1-AMS Series E 762 (ca. 1960)
1:25000 Edition 1-AMS Series E 866 (ca. 1960)

These are all laid out with the 1000 meter universal transverse Mercator grid, zone 17.

Thus the numbers appearing beneath the date and province in the upper left hand corner of the page mean that the following plants on the page were collected at that location, unless a line is drawn and another number written down indicating a change in location. This is the same as my ~~wisco~~ procedure in Wisconsin with the township, range and section numbers which are a similar means of locating places.

The method of designating the location is given on each topographic map. I will make the following modifications as I will be interested usually in ~~locatio~~ areas rather than point locations. The two coordinates will be separated by a slash mark (/). The decimals will be separated by a dash (-) to show that the area extends from eg. 792 to 797 (792-7/...).

For Example: the Puerto Pilón 1:25000 sheet, Panamá, (Edition 1-AMS, Series E866, sheet 4244 III SE). The description of Cocovi Island would be: 17PPA 263-5/382-5.

4

U.S.A.: COLORADO: Teller Co.

Grazed slopes with scattered Pinus ponderosa, much granite gravel. alt. 8250 ft.

Just south of FLORISSANT. (T 13 S; R 71 W; SE$\frac{1}{4}$ 2)

Coll.: M. Nee No. 6511-6524 August 8, 1973

August. 8, 1973

Teller Co., Colorado

T13S; R71W; SE¼ Sec. 2

6511-6524 Grazed slopes with scattered Pinus ponderosa on slopes just S of Florissant. alt. 8250 ft.

6511-6520 Thijn Gravelly soil with gravel (granite)

WIS, NEE, COLO. 6511 ? Cladonia
gravel Xanthoparmelia chlorochloa (Tuck.)

WIS, NEE 6512 lichen Xanthoparmelia chlorochloa (Tuck.) Hale
gravelly soil and Pinus needles. Hale

WIS, COLO, NEE, 6513 Parmelia
stones on ground.

WIS, NEE. 6514 lichen

WIS, NEE. 6515 lichen Heppia lutosa (Ach.) Nyl.

WIS, NEE. 6516 lichen Lecidea auriculata Th. Fr.

WIS, NEE, COLO. 6517 lichen Acarospora smaragdula (Ach.) Massal.

WIS, NEE. 6518 lichen Aspcilia cinerea (L.) Koerber, s.l. s.l.

WIS. 6519 lichen
on granite stones.

WIS, NEE. 6520 ? Rhizocarpon Dimelaena oreina (L.) Norman

6521-6524 On soil.

WIS, NEE. 6521 moss.

WIS, NEE. 6522 Cladonia cariosa (Ach.) Spreng.

WIS, NEE, COLO, 6523 lichen. Xanthoparmelia chlorochloa (Tuck.) Hale

WIS, NEE. 6524 lichen. Catapyrenium lachneum (Ach.) s.s. R. Sant.

This is probably an outcrop of the Pikes Peak granite. I collected a piece of the rock (r) later when we visited the small headquarters of the Florissant Fossil Beds

6 Aug. 8, 1973

Teller Co., Colorado.
T13S; R71W; SE. Sec. 2.
National Monument.

I had been collecting my lichens while Drs. Jetis, Leo Hickey, David Dilcher, Thorne and two others were digging through a fossil bed with moderate success. All in all this was a very interesting side trip from the Boulder ICSEB meetings - the conversation and scenery on the way, the flora which was totally ~~to~~ new to me and fossil hunting with people who knew something about fossils.

PANAMA

I had intended to begin this book with my Panamá collections but couldn't resist collecting lichens in Colorado. From Boulder, I left for St. Louis with Fred Utech, Al Gentry and two others. Monday and Tuesday (Aug. 13+14, 1973) were spent in St. Louis talking with Tom Croat, Al Gentry, Joseph Kirkbryde, J. Dwyer, Ron Liesner, ~~and even~~ Marshall Crosby and even Peter Raven. I ~~gained~~ absorbed a lot of information about what I was to do in Panamá and how to go about doing it but was getting very ancy to be there and collecting.

The plane flight down was boring and I was getting even more impatient to get there. And then I saw the Caribbean coast, where exactly I could not be pure from my roadmap which I had been carrying constantly for the last week and a half. We crossed forest covered hills and ranges which looked so inviting but of course I knew how difficult they are to get to. The Pacific side was much more settled but as we dropped down, I could pinpoint our position on the map and finally as we came down, I was again at the airport which I remembered from the flight back from Brasil in 1970 and Scott Mori and my trip in 1971.

As I sit here in my house trailer at Summit Garden on Aug. 19, 1973, listening to some unknown animal huffing and grunting at the zoo, I am reminded that ~~I~~ of all my journeys and journals so far, this is probably the time to ~~eat~~ ~~select~~ write, as time and energy permit, of my experiences and thoughts. Years from now, people will

look back to our times, as we look back to the times of Pittier or Standley, Humboldt and Bonpland or Luis Née, wondering about their feeling when confronted by the new and strange biology of the tropics, the wild vistas, the exhilaration of finding something which one knows is new, all of this and even down to the minutiae of what they ate and how they got it and how they then got from one place to another which we now can do in such + such a manner.

I will certainly not be the last to see the tropics but among those biologists who know and feel, there is the common forboding knowledge that it is all going and for each passing year, it is more and more only a miracle that will keep ~~part of~~ that which is now like the madden forest Preserve from becoming the biotic plum ~~across~~ which now exists across that line to the north. Things are changed, changed utterly, ~~but where is the~~ but shall the wail of the bann sidh forever die out across the land as all the life they wail precedes?

Aug. 18, 1973

Canal Zone, Panamá
[79°42'10"W; 9°7'30"N] 17PPA 428/086

6525-6541 Near top of hill on N side of Gamboa. alt. ~~500ft~~ 175m ~~Forest with many palms~~. Secondary tropical moist forest with many palms

6525-6536 On boulder.

MO, 7. 6525 fern.?
Easily tearing off in mats leaving bare rock.

6526 moss.

F. 6527 hepat.

MO 6528 moss

F, . 6529 hepat

MO 6530 Leucobryaceae

F, 4. 6531 hepat.

6532 moss.

MO, . 6533 Hymenophyll. Trichomanes krausii Hook. & Grev. D.L. 1977.

MO. 6534 fern. Hecistopteris pumila (Spreng.) J. Sm. D.L. 1977.

6535 [vacant]

US, . 6536 ?~~Hymenium~~ Coenogonium

6537-6538 Old rotten log.

MO 6537 moss

MO 6538 moss.

6539-6541 On fallen trunk of small palm.

F, . 6539 hepat.

F. 6540 hepat.

MO 6541 moss.

Aug. 18, 1973
- 21, 1973

It was very galling to have to run around trying to get things arranged so I could start real collecting. As it was I had to confine myself to bryophytes and miniature ferns for lack of drying facilities.

My problem with the jeep - one of the 4-wheel drive levers was knocked into neutral - was solved fairly easily after I'd almost let a free-lance mechanic put in a new pressure plate for $35. plus parts. Luckily I decided to give Hyams a chance to work on it and they turned out to be the ones who had just overhauled the motor anyway. They don't charge for stupidity, fortunately.

The drying facilities were another matter and as I write this (Aug. 21, 1973) I'm hoping that this afternoon it will all be fixed. The fire inspector has completely condemned the facilities in the new herbarium in the Battery recharging shed of the Samboa Dredging Division. He is very much under pressure not to have another herbarium fire and is adamantly declaring that all future driers on the second floor must be approved by Underwriters Labs, have a CO_2 extinguishing system etc. etc. or be moved to a fireproof building. none of which seem to be available at the moment in the whole of the Dredging Division and its only a 6 ft. x 2 ft. drier I want a place for anyway.

So now, if: Sizemore overrules the fire inspector about the light bulb driers and if my jeep sitting along the road between Summit and Samboa is suffering from nothing but lack of gas - maybe I can get to work.

Aug. 19, 1973

Canal Zone, Panamá
17PPA 523-5/168-171

6542-6546 Along Madden Road near turnoff to Boy ~~B~~ Scout Camp. 1½ km. S of Madden Dam. alt. 90 m.

6542-6543 On rock of damp shaded roadcut.

F, , , . 6542 hepat.

F, . 6543 hepat
bright, almost luminous, yellow green.

6544-6546 Roadside thicket.

MO, PAN, 6. 6544 Annona purpurea M.+S. det. R. Liesner, 1975
Small tree 6 m. tall ~~w~~ with 4 trunks. Bark sweetly fragrant, leaves spicy pungent. Wounded areas on fruit attracting many small black bees.

MO, PAN, 6545 Cestrum latifolium Lam. det. D'Arcy XII. 1973
Slender shrub 4 m. tall. Fruit green.

MO, PAN, 3 6546 Dichorisandra hexandra (Aubl.) Standl. ! R.L. 1976
1 m. tall. Petals blue. Anthers with two ~~b~~ blue ~~lateral~~ marginal stripes.

17PPA 522/158 Canal Zone, Panamá
6547-6549 Damp shaded weathered rock side of Quebrada Las Conchas at the ~~#~~ Madden Hwy bridge over Río Chilibrillo. 2.5 km. S of Madden Dam.

F, . 6547 hepat.

F, , . 6548 hepat.
Not appressed. ~~Forming~~ Forming "shelves"

MO 6549 moss.

12 Aug. 19, 1973

Canal Zone, Panamá

17PPA 517-520/ ~~00~~ 049-050

6550-6563 George Green park along Madden Hwy., Madden Forest Preserve. Tropical Moist Forest.

6550 - 6554 Damp shaded rocks along small stream above waterfall. alt. 100 m.

US, . 6550 lichen

F 6551 hepat

F. 6552 hepat.

F. 6553 hepat

bright, almost luminous, yellow green. Common.

MO 6554 moss.

~~6555-6563~~ 6555-6563 alt. 85 m. Along road.

MO 6555 moss. Hypophila involuta (Hook.) Jaeg. & Sauerb.

Concrete and stones of bridge.

F, . 6556 hepat.

rock along stream.

6557-6561 Up to 1 m. from ground on giant Anacardium excelsum.

MO 6557 moss.

F. 6558 hepat

F, , . 6559 hepat.

F, . 6560 hepat.

F, , , . 6561 hepat.

6562-6563 damp shaded clay and gravel along roadside.

Aug. 19, 1973

Canal Zone, Panamá
17PPA 517-20/049-50
MO 6562 moss. Fissidens mollis Mitt. det. R. Pursell, 199_.
F, , . 6563 hepat.

The Madden Forest Preserve seems to look even better than most of the rest of the Canal Zone I've ~~seen~~ seen and is certainly a great contrast to anything right outside the boundary on the way to Madden Lake. Bustavia superba is actually so common in places that you can smell it driving by in a car - it has that peculiar rotten odor, cf. "mula muerta" and S. fustis-mortui.

Canal Zone, Panamá 17PPA 484/022.
MO 6564 moss
On clay and ashes in hedge, Summit Gardens.

Aug. 20, 1973

Canal Zone, Panamá
17PPA 425/078

6565-6566 Cult. in Gamboa. alt. 30 m.
det. M. Huft 1981
Antidesma

MO, PAN, 3. 6565 Euph. Sapium eglandulosum Ule. det. R. Liesner 1974
~~Small Small~~ Shrub 5 m. tall. Inflorescence first with green rachis, yellow green nectar disc, greenish white filaments, then turning to red, esp. the filaments + anthers which turn purple. The nectar disc remains yellow green. Very powerful sweet, almost nauseating odor. Not Sapium, possibly Old World Euphorb., det. M. Huft, 1981

MO, PAN, 3. 6566 ? Antidesma bunius (L.) Spreng det. G. Webster 1976
Same species as 6565. Shrub 5 m. tall. Berries red, turning dark purple when ripe and with a purple juice. Said to be eaten by children.

Canal Zone, Panamá 17PPA 458/046

MO 6567 moss Dicranella hilariana (mont.) Mitt.
Clay bank at site of burned house along ~~Hwy~~ Gaillard Hwy, 4 Km. SE of Gamboa. alt. 70 m.

My jeep had run out of gas, minutes after I had helped some people, who had been working on Barro Colorado Island, whose jeep had also run out of gas. I had hoped my extra gas would get me to Summit and then back to Gamboa in the morning but it didn't even get me to Summit so I got a moss while waiting for a ride.

Aug. 21, 1973

Prov. Colón, Panamá

17PPA 495-6/280-1

6568-6584 Remnants of forest along Hwy 79, Quebrada Sardinilla. 5 km. NNE of Cement factory and ca. 6 km. NE of Buena Vista. alt. 55 m. Tropical moist Forest.

MO, PAN, 7. 6568 Croton billbergianus Muell.-Arg.
Small tree 20 cm. diam., 6 m. tall.

MO, PAN, 9. 6569 Urera elata (Sw.) Griseb. s.l. R.L. 1978
Fruit splitting during drying.
Vine. Flowers white, odorless.

MO, PAN, MAD, 5. 6570 Quararibea pterocalyx Hemsl.
(w) Slender shrub, single stem, 5 cm. diam, 6 m. tall. Branches verticillate. Leaves very lauraceous looking, shiny green above, pale green below. Wood with characteristic odor.
MADw 32360

MO, . 6571 Heliconia catheta R.R.Sm. det. A. Gentry.
5 m. tall. Older leaves much torn. Bracts bright orange red at base, yellow at tip. (?= H. platystachys Baker, P.J.M. Maas 1978) ! Kress, 1983

MO, PAN, . 6572 Ficus dugandii Standl.? det. J. Conrad, 1975
Giant strangler with "trunk" 5 m. dbh. Only one fig seen from ground.

MO, PAN, 3. 6573 Quararibea asterolepis Pitt.?
Small tree 4 m. tall, 15 cm. dbh. Branches verticillate.

MO 6574 moss Fissidens zollingeri Mont. v F. mollis Mitt.
shaded clay bank. det. R. Pursell, 199-

F, . 6575 hepat.
tree leaning over stream.

 Aug. 21, 1973

Prov. Colón, Panamá
17PPA 495-6/280-1

F. 6576 hepat.
on tree leaning over stream.

MO, PAN, WIS. 6577 Bustavia superba (Kunth) Berg. det. S. Mori 1975
Common. Small tree 6 m. tall, 25 cm. dbh. with "stilt" roots, undoubtedly from being undercut by stream. I saw one ~~stem~~ tree of this species 30 cm. dbh. Seedlings and saplings common. No flower or fruit but new leaf flushes in all stages. Bracts subtending leaf flushes pink at tips.

6578-6580 Lower trunk of Bustavia #6577.

F. 6578 hepat.
F, . 6579 hepat.
F, , . 6580 hepat.

MO, PAN. 6581 Coffea arabica L. ! J. D. Dwyer 1974
Shrubs 3 m. tall. Small cultivated patch in cleared area.

MO, PAN, 4. 6582 Gram. Saccharum spontaneum L. G. Davidse 1974
to 5 m. tall. Solid stand in open along stream, most had recently been cut and burned.

MO 6583 moss. Pohlia peracuminata Bartr.
Low spot in grassy fenceron, on clay + gravel.

F, 8. 6584 hepat.
On leaves of Bustavia #6577.

Aug. 23, 1973

Canal Zone, Panamá
17PPA 364-6/143-5

6585-6596
6599-6600 Along Pipeline Road, 9 km. NW of Bamboa.
alt. 150 m. ~~Tropical Moist Forest.~~
Premontane wet forest.

MO 6585 moss.
Rare on bare ~~spe~~ red clay in open along pipeline.

MO, PAN, MAD, 3. 6586 Piper sp. nov.
MADw 32361 (w) Shrub 2 m. tall. Spikes erect. det. J.C.

F, , . 6587 hepat.
on leaves of Piper #6586.

F. 6588 hepat.
on leaves of Piper #6586.

MO, PAN, 2. 6589 Philodendron fragrantissimum (Hook.) Kunth
3 m. from ground on small tree.
det. T. Croat, 1975
Cluster of leaves with 9 inflorescences.
Spathes light yellowish above, deep red below. Inflorescences filled with water. ~~6590~~ U x sect. petiole.
~~6590~~ 6590-6591 on leaves of 6589.
6590 hepat.

F, 4. 6591 hepat.

["6591 Philodendron fragrantissimum (Hook.) Kunth det T. Croat, 1975". Number mixed with 6589?]

MO, PAN, MAD, 4. 6592 Solanum jamaicense Mill. ! D'Arcy XII. 1973
MADw 32362 (w) Shrub 3 m. tall. Petals white, recurved.
Only a few berries turning orange.
Along roadside. Seedlings more common than flowering or fruiting plants.

18 Aug. 23, 1973

Canal Zone, Panamá
17PPA 364-366/143-145

MO, PAN, 3. 6593 Bignon. Phryganocydia corymbosa (Vent.) Bur. ex K. Schum. det. Al. Gentry 1973
Vine to about 7 m. at edge of forest.
Flowers light purple, faintly fragrant.

MO, PAN, 3. 6594 Stromanthe lutea (Jacq.) Eichl.? S. jaguinii (R. & S.) Kennedy & Nicholson
Up to 2.5 m. tall. Flower parts orange.

MO, MAD. 6595 Palm. Welfia georgii
MADw 32363 ⓦ 14 m. tall. Inflorescences below leaves, flowers white. Leaf bases deciduous soon after leaf dies. Leaf 5 m. long (from basal pinnae to tip).

MO, PAN, MAD, 3. 6596 Apeiba timbourbou Aubl.
MADw 32364 ⓦ. Tree 15 m. tall with leaning trunk 15 cm. x 45 cm. Wood very soft. Flowers yellow, fragrant. Bark tough and peeling off in strips.

17PPA 371/135

6597-6598 Roadside along Pipeline Road, 8 Km. NW of Bamboa at Río Mendosa bridge. Premontane wet forest ~~Tropical Moist Forest~~

MO, PAN, MAD, 7. 6597 Solanum ~~hazenii Britt.~~ rugosum Dun. det. D'Arcy XII 1973
MADw 32365 ⓦ Shrub 4 m. tall. Foetid. Corolla white.

MO, PAN, 4. 6598 Gram. Paspalum fasciculatum Willd. ex Fluegge
Scandent. Common. det. G. Davidse 1974

Aug. 23, 1973

Canal Zone, Panamá
17PPA 364-366/143-145

6599-6600 On trunk of palm. #6595

MO 6599 moss.
Abundant all along trunk.

F, . 6600 hepat.
1 m. from ground.

Aug. 24, 1973

Canal Zone, Panamá
17PPA 424/078

6601-6603 On trunk of Roystonea regia at Dredging Division, Gamboa. alt. 30 m.

US, . 6601 Ramalina usnea
US, . 6602 Ramalina
US. 6603 ? Ramalina

17PPA 370-72/135

6604-6627 8 km. NW of Gamboa along Pipeline Road near bridge over Río Mendosa. ~~Tropical Moist~~ Forest. alt. 100 m. Premontane wet forest.

6604-6618 Along small stream.

6604-6605 4 m. from ground on twigs of shrub along small stream.

F, , , . 6604 hepat.
Very common. Horizontal.

F, . 6605 hepat.

MO 6606 moss.
3 m. above stream on leaning tree.

6607-6609 On horizontal trunk 2 m. above stream.

F, , , , , , 6607 hepat.
, .

Aug. 24, 1973

17PPA 370-72/135

Canal Zone, Panamá

[redacted] MO. 6608 Hymenophyll. Trichomanes reptans Sw. ? D.L. 1977

MO, . 6609 Hymenophyll. Trichomanes curtii Rosenst. D.L. 1977

6610-6612 Rocks along small stream.

F, , . 6610 hepat.

MO 6611 moss

MO 6612 moss.

MO, PAN, 6. 6613 Selaginella arthritica Alston D.L. 1977
along bank of small stream.

F. 6614 hepat.
Rotten palm log.

MO 6615 moss
Common on 20 cm. dbh. palm trunk.

6616-6617 On rotten log.

F, . 6616 hepat

MO, 6617 moss.

MO, PAN, MAD, . 6618 Mabea occidentalis Benth.
MADw 32366 (w) Slender shrub 4 m. tall.

MO, PAN, MAD, 8. 6619 Comp. Wulffia baccata (L.f.) Kize.
MADw 32367. (w) Vine along roadside ~~&~~ thicket, to 4 m.
Rays orange, ~~disc~~ yellow, disc orange.
Stem green, mottled with purple.

 April 24, 1973

Canal Zone, Panamá
17PPA 370-2/135

MO, PAN, MAD, 12. 6620 ♀ Saurauia laevigata Tr. + Pl. R. Liesner 1973
MADw 32368 (W) Sprout off a stump. 6 m. tall, 7 cm. dbh.
Petals white. Only a few flowers left.

MO, PAN, 7. 6621 Poliocarpus major Gmel.
Large vine 8 m. high in trees. Fruit green.
~~6622 hepat~~

6622-6623 Steep roadside bank with Lycopodium cernuum, Dicranopteris pectinata, Selaginella.

F, , . 6622 hepat.
on clay.

F, , , , , , 6623 hepat.
.

~~6624~~ 6624-6625 Clay bank along Río Mendosa.

F, , , . 6624 bryophyte.

F. 6625 hepat.

MO 6626 moss.
Base of shrub in roadside thicket.

F, , , , , 6627 hepat.
, . On leaves of Mabea occidentalis (#6618).

Aug. 26, 1973

Canal Zone, Panamá
17PPA 362-4/144-5

6628-6636 9 Km. NW of Gamboa on Pipeline Road.
alt. 125 m. ~~Tropical Moist Forest.~~
Premontane wet forest.
6628-6633 On upper trunk of large tree.

F, , . 6628 hepat.
F, , . 6629 hepat.
US, . 6630 Graphid.
US, , , , . 6631 lichen
F, . 6632 hepat.
F, , . 6633 hepat.

MO, PAN, 8. 6634 Gram. Olyra latifolia L. det. G. Davidse 1974
Edge of forest. 2 m. tall.

MO, PAN. 6635 Gurania seemanniana Cogn. vel sp. aff. Liesner 1973
Vine to 4 m. Edge of forest. Calyx orange, petals yellow.

MO, PAN, . 6636 Gram. Olyra latifolia L. det. G. Davidse 1974
Edge of forest. 2 m. tall.

17PPA 368/128

6637-6643 Along Pipeline Road 8 Km. NW of Gamboa.
alt. ca. 115 m. Tropical Moist Forest.

MO, PAN, 4. 6637 Dicranopteris pectinata (Willd.) Underw. & D.L. 1977
Abundant and forming thickets in open along steep red clay roadcut. Invades areas of bare clay by means of long rhizomes tightly attached to the surface which

Aug. 26, 1973

Canal Zone, Panamá
17PPA 368/128

is matted together by bryophytes and the fern roots.

MO 6638 moss.
On open clay bank.

MO, PAN, 7. 6639 Lycopodium cernuum L. ! D.L. 1977
Open roadside.

MO, PAN, 14. 6640 Dichromena ciliata Vahl
Gravelly roadside. Some old inflorescences bending over and new plantlets appearing. Bracts white at base.

MO, PAN, 11. 6641 Pouzolzia obliqua ~~(Poepp.) Wedd.~~ Gaud. R. Liesner 1974
Decumbent weak stemmed shrub 1.5 m. tall. Roadside

MO, PAN, 9. 6642 Cyperaceae Scleria pterota Presl det. G. Davidse, 1975
Roadside.

MO, PAN, MAD, 2. 6643 Cecropia hispidissima Cuatr. det. J. Conrad 1974
MADw 32369 @ 13 m. tall, 12 cm. dbh. single stemmed tree. Leaves bright green above, white below with green veins. Fruiting spadices erect. Petioles to 0.75 m. long. Leaves and upper stem with annoying stiff hairs, many small ants and a few large ants.

Aug. 27, 1973

Canal Zone, Panamá

Today I collected nothing at all; it was another day of running around trying to arrange for a drier. I had looked at the Tropic Test Center drier last week to see if I could use it. It had been partially dismantled as they are trying to get rid of it and thinking that if common sense would prevail I could get better driers, I dropped the idea of getting more than a few parts off it. So today the powers that be have decided that it is just the thing for Summit Herbarium and I have to agree that it will work if installed and under the circumstances I might as well get it even though there are much simpler ways of getting driers that are as safe or safer than that monster.

I believe I sounded a note of optimism some pages back, an optimism that was shattered by the fire inspector. While I'm in a good mood now, ~~I have very~~ I will be very little surprised if Lt. Wilder finds it entirely unsatisfactory without a guarantee from God despite the fact that in its almost 10 years of operation it has never caught on fire and never caused the fire inspector to run to his rule books.

In a prolonged fit of laziness in part inspired by exasperation, I find I have neglected to put down very much about ~~my~~ my first week + ½ in Panamá, perhaps some of the most ~~f~~ significant in that they are ± my first impressions of this part of the tropics and certainly of any area which I expect to become more

 Aug. 27, 1973

Canal Zone, Panamá

thoroughly aquainted.

So: On my Aug. 26, 1973 jaunt out along the Pipeline Road I began with faint optimism which soon turned to a completely rout. My first collections were from only as far as I'd gotten on Aug. 23, 1973 on the Pipeline Road. Just after watching an anteater cross the road (at least it looked long nosed, hairy & anteaterish-like) there was a tree across the road. ~~Aug~~ My jeep was stalling whenever I let up on the accelerator so I had half a reason to not go any farther and the discovery that my notebook had slid off the seat and fallen out of the ~~right pocket~~ ricketty door gave me an additional reason and a half to turn back. I walked around a little, got some cryptogams off the fallen tree (never pass up the opportunity to collect from the top of a rain forest tree) and a couple other things and then turned around.

I eventually found my notebook almost halfway back to Gamboa. I turned around again and stopped at the first place that caught my eye and collected things until it started raining. I never have ~~so~~ much energy for collecting if the capacity of my driers is not sufficient to process everything I could pick up.

My sense of what to collect is still very poor. Should I collect Dichromena and Dicranopteris because they are such common weeds that professional collectors ignore them or should I get whatever native woody things I can find because they are always of interest? But of course I know very few of the species and my natives usually ~~turn~~ turn out to ~~be~~ be the

Aug. 27, 1973

Canal Zone, Panamá

most common things, just as one might expect. After I get away from the Canal Zone I won't have to worry about such things.

2 28 Aug. 28, 1973

Ca Prov. Panamá, Panamá
17PPV 478-80 / 831-4
6644-6662 6 km. S of Arraiján.

6644-6654 Pasture and roadside. alt. 10 m.

MO, PAN, 5. 6644 Solanum (sect. Micracantha) lanceifolium Jacq. det. D'Arcy XII. 1973
Vine 1.5 m. tall. Ripe berries orange.

MO, PAN, 4. 6645 ♂ Cissus sicyoides L.
Vine 2 m. tall. Flowers yellowish green, odorless. det. T. Croat, 1975

MO, PAN, 5. 6646 Solanum (sect. Micracantha) lanceifolium Jacq. det. D'Arcy XII. 1973
Viny shrub 2 m. tall. Corolla with dark purple hairs on outside when in bud, these fading during anthesis. The corolla itself is white.

MO, PAN, 6. 6647 Solanum (sect. Brevantherum) ~~rugosum~~ Dun. det. D'Arcy XII. 1973
Shrub 2 m. tall. Corolla white, berries green.

MO, PAN, MAD, 4. 6648 Solanum (sect. Torvum) ochraceoferrugineum (Dun.) Fern. det. D'Arcy XII. 1973.
MADw 32370 ⓦ Shrub 2 m. tall. Corolla white.

MO, PAN, 6. 6649 ? Hyptis verticillata Jacq.
Slender multi-stemmed shrub 2 m. tall.

MO, PAN, 5. 6650 Piper marginatum Jacq. det. J. Conrad 1974
Shrub 2 m. tall. Spikes arching. Plant very spicy aromatic.

MO, PAN, 2. 6651 Sporobolus jacquemontii Kunth det. G. Davidse 1974
Dense clumps.

MO, PAN, 2. 6652 Paspalum virgatum L. det. G. Davidse 1974
Common.

Aug. 28, 1973

Prov. Panamá, Panamá

17PPV 478-480/831-834

MO, PAN, 3. 6653 gram. Cynodon dactylon (L.) Pers. det. G. Davidse 1974

MO, PAN, 4. 6654 Comp. Melampodium
To 1 m. tall. Rays and disc deep yellow.

17PPV 480-484/834-39

6655-6662 Brushy pasture on SW slope of Cerro Cabra.

MO, PAN, MAD, 5. 6655 Thevetia ahouai (L.) DC. det. A. Gentry 1974
MADw 32371 (w) Slender shrubs to 1.5 m. tall, with milky juice. Flowers yellow, fruit turning bright shiny red.
alt. 50 m.

MO, PAN, MAD, 5. 6656 ? Eugenia galalonensis (Griseb.) Urb., yel sp. aff.
MADw 32372 (w) Shrub 2 m. tall. Alt. [illegible] m.
det. R.L.

MO, PAN, 4. 6657 Pothomorphe peltata (L.) Mig.
1 m. tall. Alt. 150 m.

6658-6662 Second growth at edge of tropical moist forest remnant. alt. 200 m.

MO, PAN, MAD, 2. 6658 Chrysophila warscewiczii (Wendl.) Burret
MADw 32373 (w) Single stem, spiny roots covering lower 1 m. 10 m. tall. det. de Nevers, 1986.

MO, PAN, MAD, . 6659 Cecropia peltata L. det. T. Croat + J. Conrad
MADw 32374 (w) Tree 10 m. tall, branched only at top. Inhabited by myriad small stinging ants.

Aug. 28, 1973

Prov. Panamá, Panamá
17 PPV 480-484/834-39

6660-6662 On branch fallen from tree.

MO. 6660 Cactus Hylocereus trigonus (Haw.) Safford
Flower apparently yellow, turning to mush. Both green and yellow bracts at base of flower with dark red margins. det. H. Bravo & L. Scheinvar, 1985

MO, PAN, " 6661 (Polypodium) microgramma lycopodioides (L.) Copel.
D.L. 1977

US, " " " " 6662 Ramalina usnea

Aug. 29, 1973

Canal Zone, Panamá
17PPA 419/078-81
While I kept a close eye on the drivers:

For lack of anything more exciting to do

6663-6674 Gamboa, Dredging Division area. alt. 30 m.
6663-6666 On cult. *Codiaeum variegatum* shrubs.

F, , , . 6663 hepat.
at base.

MO 6664 moss *Pterogonidium pulchellum* (Hook.) C. Müll.
1.5 m. from ground.

US, , , . 6665 ?*Parmelia*

MO 6666 moss.
1 m. from ground.

6667-6670 Tree along ~~canal~~ Panama Canal.

US, , , . 6667 lichen.
0-1 m. from ground.

US. 6668 Graphidaceae
0-1 m. from ground.

US, , . 6669 Graphidaceae
base.

US, . 6670 lichen
0-1 m. from ground.

~~6671~~ 6671-6672 Trunk of shrub along Panama Canal.

F, . 6671 hepat.

~~F, .~~ 6672 hepat.

F, . 6673 hepat.
1.5 m. from ground on *Mangifera indica* tree along Panamá Canal.

F, , , , . 6674 hepat.
on cement block in shade.

Aug. 30, 1973

Prov. Colón, Panamá

ca. 17PPA 360/412 + vic.

I took off at noon with no special site in mind, either the cement plant road to Sardinilla, Sta. Rita ridge or maybe further. I ended up between Puerto Pilón and María Chiquita. Even with the 1:25000 topographic maps it is hard to tell exactly where you are because you can't drive and keep an eye on the map and the landscape at the same time.

6675-6701 (except 6699) 7 km. NE of Puerto Pilón on road to Portobelo. alt. 10 m.

6675-6676 Secondary forest. Premontane wet forest.

MO, PAN, 14. 6675 Convolv. Ipomoea phyllomega (Vell.) House O.F. Austin 1974
Vine to 8 m. Flowers light purple, odorless, very soon shriveling.

MO, PAN. 6676 ?~~Doliocarpus~~ Davilla nitida (Vahl) Rubitzki
Vine. det. R. Liesner 1974

6677-6684 Low second growth brush.

MO, PAN, 2. 6677 Rub. Sabicea villosa H.B.K. det. J. Dwyer 1974
Vine. Corolla white.

MO, PAN, 4. 6678 Myrtaceae Myrcia gatunensis Standl. det. R.L.
Shrub 5 ft. tall.

MO, PAN, 6. 6679 Comp. Mikania psilostachya DC. R.L. 1976
Vine to 4 m.

MO, PAN, MAD. 6680 Rub. Isertia haenkeana DC. det. J. Dwyer 1974
MADw 32375 (w) Shrub 2.5 m. tall. Inflorescence red, upper half of corolla yellow.

Aug. 30, 1973

Prov. Colón, Panamá

ca. 17PPA 360/412 & vic.

MO, PAN, 4. 6681 Malp. gh. Byrsonima crassifolia (L.) H.B.K.
Tree 10 m. tall, 20 cm. dbh. Petals and glands yellow, turning red. Few flowers, mostly in fruit.

6682-6684 1-1.5 m. from ground on trunk of Byrsonima crassifolia (# 6681)

? 6682 hepat.

F, . 6683 hepat.

F, . 6684 hepat.

~~6685 Manicaria~~

MO, . 6685 Manicaria saccifera Gaertn.
Short palm 5 m. tall (trunk 2 m. tall.). Blade of leaf 3.5 m. long.
In pasture with Cocos nucifera and Citrus trees.

6686-6690 open marsh in pasture.

MO, PAN, 7. 6686 Cyperaceae Rhynchospora corymbosa (L.) Britt.
Common. det. W. W. Thomas.

MO, PAN, 4. 6687 fern. Blechnum serrulatum L.C. Rich.
Rhizomes tending to ~~form~~ grow upright, forming tussocks to 0.4 m. tall (signs of burning). det. D. L. 1977

MO, PAN, 9. 6688 Eleocharis interstincta (Vahl) Roem. & Schult.
Forming large solid stands. det. G. Davidse

Aug. 30, 1973

Prov. Colón, Panamá

ca. 17PPA 360/412 • vic.

MO, PAN, 7. 6689 Fuirena umbellata Rottb.
Occasional. det. G. Davidse

MO, PAN, 10. 6690 Cyperaceae Rhynchospora trichodes C.B. Clarke

6691-6697, 6700-6701 Pasture.

MO, PAN, 3. 6691 Gram. Homolepis aturensis (HBK.) Chase
Common.

MO, PAN, 2. 6692 Sauvagesia erecta L. det. R. Liesner 1974

MO, PAN, 3. 6693 ~~Panicum~~ Fimbristylis dichotoma (L.) Vahl

? 6694 Panicum

MO, PAN, . 6695 Paspalum virgatum L. det. G. Davidse 1974

MO, PAN, 6. 6696 Paspalum plicatulum Michx. " "

~~6697~~

MO, PAN, 4. 6700 Euphorb. Croton trinitatis Millsp.
Common.

MO, PAN, 3. 6701 Eleocharis retroflexa (Poir.) Urb.
Forming solid dense mat. det. G. Davidse, 197_

6697-6698 Roadside.

MO, PAN, 6. 6697 Comp. Wedelia trilobata (L.) Hitchc. ! R.L. 1976
Creeping. Rays and disc yellow.

MO, PAN, 5. 6698 Pennisetum purpureum Schumach. det. G. Davidse 1974
To 3 m. tall. Forming stand.

17PPA 343/388

MO, PAN, 2. 6699 Anthurium denudatum Engl.:
Epiphyte 3 m. from ground on roadside tree ~~over~~ near bridge over Rio Viejo. Young inflorescences erect, ones with ripe fruit hanging.

Aug. 30, 1973

Prov. Colón, Panamá
17PPA 343/388

Ripe fruit bright ~~orange~~ red orange with sticky substance within. Major veins prominent above and below but fading out toward margin - cross section of petiole.

alt. 5 m. on Puerto Pilón - Portobelo road.
4 km. NE of Puerto Pilón.

Sept. 2, 1973

6700-6701 see p. 34.

Canal Zone, Panamá
17P PA 484-90/022-5

6702-6727 Summit Gardens. Alt. 90 m.

~~B~~ MO 6702 moss
Shaded cement wall.

6703-6704 dead branch in thicket

US, , . 6703 graphid.
US, . 6704 lichen.

MO 6705 moss.
base of vine in thicket.

6706-6711 On Citrus shrub.

MO 6706 moss
MO 6707 moss.
base.
F, . 6708 hepat.
F. 6709 hepat.
MO 6710 moss
F, . 6711 hepat.

~~67~~ 6712-6715 Large Hevea tree

MO 6712 moss. Taxithelium planum (Brid.) Mitt.
base.

~~F~~ MO 6713 moss.
base.

US, , . 6714 lichen.
1.5 m. from ground.

Sept. 2, 1973

Canal Zone, Panamá

17 PPA 484-90/022-5	6715	lichen
		0.5-2 m. from ground.
		6716-6718 On *Citrus* shrub.
US, , , .	6716	lichen.
US, .	6717	lichen
US.	6718	Graphid.
		6719-6721 On *Psidium guajaba*
US, , , , .	6719	lichen?
F, .	6720	hepat.
F, , , .	6721	hepat.
		6722-6724 Large log in shade.
MO	6722	moss. *Taxithelium planum* (Brid.) Mitt.
MO	6723	moss
F, , .	6724	hepat.
		6725-6726 On large tree.
F, .	6725	lichen
		0.5-1.5 m. from ground.
US, , , , .	6726	~~hepat.~~
		1.5 m. from ground.
MO	6727	moss
		On gravel.

Sept. 2, 1973

Canal Zone, Panamá
17PPA 424/078

US, . 6728 ? Parmelia
2 m. from ground on Roystonea regia
at Dredging Division, Gamboa. alt. 30 m.

17PPA ~~[illegible]~~ 410-414/080-081
6729-6743 Ca. 1 Km. W of Gamboa. alt. 30 m.

MO, PAN, 5. 6729 ? Spondias
Tree 12 m. tall between ~~lagoon~~ pond and road ~~[illegible]~~. Abundantly fruiting. Fruit green, then turning orange and falling, ~~with~~ very juicy and sweet smelling. Foliage with resinous odor.

6730-6735 4 m. from ground on ~~trees~~ branches of # 6729.

US, . 6730 Parmelia
Common.

US, . 6731 lichen.

US, , . 6732 Graphid.

US. 6733 Graphid.

US, . 6734 lichen?

F. 6735 hepat.

MO, PAN, 6. 6736 ~~Digitaria~~ Axonopus compressus, (Swartz) Beauv.
Open grassy spot along RR. det. G. Davidse 1974

Sept. 2, 1973

Canal Zone, Panamá
17PPA 410-414/080-081

MO, PAN, 2. 6737 Panicum maximum Jacq. det. G. Davidse 1974
Abundant along RR.

MO, PAN, 3. 6738 Andropogon Schizachyrium microstachyum det. Davidse 1974
Scattered along RR gravel. (Desv.) Roseng. & Izag.

MO, PAN, 3. 6739 ~~Rhynchospora~~ Fimbristylis Cyperus rotundus L.
Gravel of RR. det. G. Davidse, 1975

MO, PAN, 2. 6740 Eleocharis interstincta (Vahl) Roem. & Schult.
Edge of small pond along RR. det. G. Davidse

MO, PAN, 7. 6741 Paspalum conjugatum Berg. det. G. Davidse 1974
Grassy opening.

MO, PAN, 5. 6742 Scleria pterota Presl det. G. Davidse, 1975
Grassy opening at edge of pond.

MO, PAN, 5. 6743 Gram. Bothriochloa intermedia (R. Br.) A. Camus
With Panicum maximum along RR. Dense clump. det. G. Davidse 1974

 Sept. 3, 1973

Canal Zone, Panamá
17PPA 427/078

MO, PAN, . 6744 Myrt. Eugenia sysygioides C.F. det. R. Liesner, 1975
Cultivated tree, Gamboa. Stamens white, faintly fragrant. alt. 30 m.

17PPA 420/084

6745-6777 Brushy 2nd growth tropical moist forest on hillside, W side of Gamboa. alt. 60 m.
Tropical Moist Forest. Along road to Cerro Pelado Radar station.
6745-6749 Partly shaded clay roadside bank.

MO 6745 moss. Fissidens laxus Sull. + Lesq.
abundant. det. R. Pursell, 199-

MO 6746 moss

MO 6747 moss

MO 6748 moss.
Forming loose mats, usually over old leaves, roots, twigs etc.

MO, PAN, , . 6749 Hymenophyll. Trichomanes pinnatum Hedw. DL. 1977

MO 6750 moss.
Mossy plank in woods.

6751-6752 On 18 cm. dbh. Byrsonima crassifolia.

F, , . 6751 hepat.
2 m. from ground.

Sept. 3, 1973

Canal Zone, Panamá
17PPA 420/084

F, 6752 hepat.
1.5 m. from ground.

6753-6755 On a leaning dead branch.

MO 6753 moss.
F, . 6754 hepat.
US, . 6755 lichen
On living branch. Rim of apothecia bright orange, disc purple.

6756-6762 3 m. from ground on trunk of Byrsonima crassifolia.

US, , , . 6756 lichen.
US, , , . 6757 lichen
US, , . 6758 lichen.
F, , , . 6759 hepat.
US, . 6760 lichen
US, , . 6761 lichen
F, . 6762 hepat.

6763-6764. 2 m. from ground on Byrsonima crassifolia.

US, . 6763 lichen.
F. 6764 hepat.

6765-6766 On Byrsonima crassifolia

US, . 6765 lichen
0.5 m. from ground.

42 Sept. 3, 1973
17 PPA 420/084
Canal Zone, Panamá

MO 6766 moss.
base

F, , , , , . 6767 hepat.
Common within 0.5 m. from ground on small shrubs.

6768-6769 Trunk of dead shrub.

US, , . 6768 lichen.
0.5-2 m. from ground.

F, , , , , , 6769 hepat.
, , , . abundant from ground up to 2 m.

F, , , . 6770 hepat.
On leaves of small shrubs and vines near ground.

MO 6771 moss
Rotten twig on ground.

MO, PAN, 6. 6772 Rub. Amaioua corymbosa HBK. det J. Dwyer 1974
Shrub 3 m. tall. Fruit dull red ~~with~~, bright yellow green at tip.

MO, PAN, 4. 6773 Fern. Adiantum lucidum (Cav.) Sw. det. D.L 1977

MO, PAN, 5. 6774 Fern. Adiantum petiolatum Desv. DL. 1977

MO, PAN, 2. 6775 Apodanthes
On small moribund shrub. Flowers in lines, white with a bright orange ovary.

Sept. 3, 1973

Canal Zone, Panamá
17PPA 420/084

MO, 2. 6776 *Apodanthes caseariae* Poit. det. A. Gentry 1972
On moribund small shrub 3 m. tall, 3 cm. diam. forming lines on trunk from base to 2 m.

MO 6777 moss.
Open gravel of roadside.

Sept. 4, 1973

Prov. Colón, Panamá

17PPA 477-9/262-5

6778-6795 Small tributary of Quebrada Ancha.
4 km. E of Buena Vista, 3 km. N of cement plant.
alt. 80 m.

MO, PAN, 4. 6778 Convolv. Ipomaea phyllomega (Vell.) House Det. O. F. Austin 1974
Vine to 5 m. in roadside thicket. Corolla and calyx pale purple. Corolla lobes extremely delicate. Milky juice abundant in pedicels, less so elsewhere in plant.

6779-6788 Pond ca. 1 m. deep.

MO, PAN, 2. 6779 Polygonum aff. acuminatum HBK. det. R. Liesner 1974
Abundant. Long floating stems. Inflorescences drooping.

MO, PAN, 3. 6780 Polygonum mexicanum Standl. (if distinct from P. segetum)
abundant. det. R. Liesner 1974

MO, PAN, 4. 6781 Polygonum hispidum HBK. ! R. Liesner 1974
Abundant. Leaves viscid below.

MO, PAN, 5. 6782 Nymphoides indica (L.) O. Ktze. det. P.M.
Leaves floating, green above, purple below. Corolla white with yellow center, odorless.

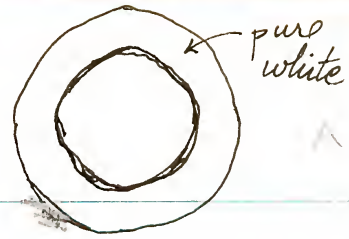
MO, PAN, 4. 6783 Gram. Panicum hirsutum Swartz Det. G. Davidse 1974
Occasional. In clumps, erect. Rooting at nodes below water level.

MO, PAN, . 6784 Asclepias curassavica L. ! D. Spellman, 1974
Rare. Petals bright orange, "crown" bright yellow.

MO, PAN, , . 6785 Rub. Hemidiodia ocimifolia (Willd.) Schum.
Spermacoce tenuior L. det. C. Adams, 1991

Sept. 4, 1973

cross section, fresh, x1



Prov. Colón, Panamá

17PPA 477-9/262-5

6786-6788 On rotten stump.

MO, PAN, , . 6786 Urtic. Phenax sonneratii (Poir.) Weddell det. R. Liesner 1979

MO, PAN, . 6787 Cyperus odoratus L. det. G. Davidse, 197-

MO, PAN, . 6788 Setaria geniculata (Lam.) Beauv. det. G. Davidse 1974

6789-6794 Disturbed remnants of tropical moist forest along stream.

MO, PAN, 6. 6789 Capsicum annuum L. var. aviculare (Dierb.) D'Arcy + Eshbaugh det. D'Arcy XII.1973

1.5 m. tall. Corolla white, anthers blue. Fruit green, then tinged with purple, then falling (?). Fruit with peppery odor and extremely hot.

MO, PAN, 5. 6790 Ficus tonduzii Standl.?

Tree 50 cm. dbh, top broken off. Fruit green, about 3 cm. diam. bright light to dark green with lighter spots.

MO, PAN, MAD, 5. 6791 Piper auritum HBK. ? ! det. J. Conrad 1974

MADw 32376 (W) Rank shrub with few branches, 5 m. tall. Aromatic. Spikes first pendant, then arching upward until erect, then pendant again.

MO, PAN, 5. 6792 Olmedia aspera R. + P.

Spreading tree 5 m. tall with 6 trunks from base. The reflexed lobes bright orange.

F, . 6793 hepat.

Shady streambank. Bright yellow green.

Sept. 4, 1973

Prov. Colón, Panamá
17PPA 477-9/262-5

MO, PAN, 3. 6794 Fern. Cyclopeltis semicordata (Sw.) J. Sm.
Common on streambank. det. D.L. 1977

MO, PAN, MAD, 5. 6795 Piper villiramulum C.DC. det. J. Conrad 1974
MADw 32377 (w) Roadside shrub 2 m. tall. Spikes erect.

17PPA 475/262

6796-6799 Near bridge over Quebrada Ancha, 4 km. E of Buena Vista, 3 km. N of cement plant. alt. 80 m.

MO, PAN, 5. 6796 Rubiac. Chiococca alba (L.) Hitchc. det. J. Dwyer 1974
Vine. Edge of quebrada and forest remnant.

6797-6799 Open weedy gravelly (limestone) roadside.

MO, PAN, 5. 6797 Tripsacum Rottboelia exaltata L.f. det. G. Davidse 1974
2 m. tall.

MO, PAN, 4. 6798 Chloris radiata (L.) Swartz. ! G. Davidse 1974

MO, PAN, 6. 6799 Digitaria ciliaris (Retz.) Koel. " "

Sept. 5, 1973

Canal Zone, Panamá
17PPA 423/089

Cerro Pelado

6800-6808 Near top of, 1 km. N of Gamboa. Alt. 220 m. (200-) Secondary tropical moist forest.

MO, PAN, 5. 6800 Cupania scrobiculata L.C. Rich. det. T. Croat 1974
Shrub 7 m. tall. Fruits not open, aril inside now pale yellow.

MO, PAN, , . 6801 Fern. Polypodium wagneri Mett. D.L. 1977
On tree trunk 1.5 m. from ground.

MO, PAN, . 6802 Fern. Adiantum petiolatum Desv. D.L. 1977
Shady roadside clay bank.

MO, PAN. 6803 Gram. Ichnanthus axillaris (Nees) Hitchc. & Chase det. G. Davidse 1974
Shady roadside clay bank.

MO, PAN, 5. 6804 ? Vitaceae. Cissus erosa Vahl det. T. Croat, 1975
Roadside vine. Inflorescence red, Fruits green with reddish spots.

MO, PAN, 11. 6805 Gram. Olyra latifolia L. det. G. Davidse 1974
To 3 m. tall. Stems first erect and simple, arching over after branching. Stem mottled with purple. Edge of forest.

MO, PAN, 3. 6806 Polygala paniculata L. ! R. Liesner 1974
Flowers pale purple. Common on roadside gravel.

MO, PAN, 11. 6807 Casearia arborea (Rich.) Urban det. H. Sleumer 1978
Tree 18 m. tall. Seed dangling, with bright orange aril.

MO, PAN, 6. 6808 Fern. Blechnum polypodioides Raddi
Shady clay and rock roadside bank.
D.L. 1977

Sept. 5, 1973

Canal Zone, Panamá
17PPA 420/085

6809-6810 Roadside on hill on NW side of Gamboa.
alt. 80 m.

MO, PAN, 3. 6809 Dioscorea cymulosa Hemsl. det. F. Ayala 1976 ! O. Téllez, 1981
Vine on shrubs. Perianth white, flowers odorless. Leaves on flowering portions lighter green and becoming much reduced.

MO, PAN, 5. 6810 Gram. Paspalum saccharoides Nees det. G. Davidse 1974
Open clay roadside.

Sept. 6, 1973

Canal Zone, Panamá
17PPA 423/078

MO, PAN, 6. 6811 Chrysanthellum integrifolium Steetz ?
Prostrate but not rooting at nodes.
Rays and disc yellow. Lawn at
Dredging Division, Gamboa. alt. 30 m.
(Dillon, 1983

I thought I had picked about all of them, but when I went past on Sept. 10, 1973, I saw numerous yellow heads sticking up from plants apparently without any in full flower before.

17PPA 47?/022
6812-6815 1/2 Km. W of Summit Gardens. alt. 70 m.

6812-6814 Hard packed soil of open pasture.

F, , , , , 6812 hepat.

MO, PAN, 13. 6813 Cyperaceae. Rhynchospora contracta
det. W. W. Thomas.

MO, PAN, 3. 6814 Croton Caperonia palustris (L.) St. Hil. det. R. Liesner 1974

MO, PAN, 5. 6815 Eragrostis acutiflora (HBK) Nees det. G. Davidse 1974
Spreading clump. Gravelly roadside.

17PPA 48/02 1/4 Km. SW of Summit Garden.
6816-6818 Second growth tropical moist forest along stream. alt. 70 m.

MO, PAN, 11. 6816 Gram. Acroceras zizanioides (HBK) Dandy
det. G. Davidse 1974

 Sept. 6, 1973

Canal Zone, Panamá
17PPA 48/02

MO 6817 moss
damp streambank.

MO 6818 moss
damp streambank.

17PPA 483/02

US, , , , 6819 Cladonia
, . Forming large patches from 2-4 m. from ground on tall smooth ~~barked~~ trunked palm. Summit Gardens. alt. 75 m.

17PPA 477/022

6820-6821 with # 6813

MO, PAN, . 6820 Fimbristylis dichotoma (L.) Vahl
det. g. Davidse, 197_

MO, PAN, . 6821 Cyperac. Fimbristylis milliacea (L.) ~~Vent.~~ Vahl
det. g. Davidse, 197_

Sept. 7, 1973

Canal Zone, Panamá

17PPA 483/019

6822-~~6832~~ 6831 Summit Gardens. alt. ~~70~~ 75 m.

6822-6826 Lower branches of spreading *Mangifera indica*.

US, , , . 6822 lichen
dark dull green with dull pink apothecia.

US, . 6823 lichen

MO 6824 moss

F. 6825 hepat.

F, . 6826 hepat.

6827-6831 Large legume tree.

MO 6827 moss
base.

US, , , , , 6828 lichen
, . base.

F, . 6829 hepat.
base.

US, , , . 6830 graphid.
1 m. from ground.

US, , , , , 6831 lichen.
. 1.5 m. from ground. common.

17PPA 483/018

MO, PAN, 19. 6832 *Cynodon dactylon* (L.) Pers.
Forming a mat, creeping out over road. 1/4 km. S of Summit Gardens. alt. 70 m.

Sept. 8, 1973

Prov. Panamá, Panamá
17PPV 195-6/603-6

6833-6872 Open "grassland" on E side of Cerro Campana with *Bulbostylis paradoxa*. alt. 600-650 m.

6833-6840 Dead shrubs.

US, , , .	6833	*Parmelia*
US, .	6834	lichen
US.	6835	lichen
US.	6836	lichen
US.	6837	lichen
US.	6838	lichen
US, .	6839	lichen
US.	6840	lichen
MO	6841	moss. Shaded boulder.

6842-6846 Slopes.

MO, PAN, 17.	6842	*Thrasya petrosa* (Trin.) Chase ! G. Davidse 1974 Common.
MO, PAN, 6.	6843	*Rhynchospora barbata* (Vahl) Kunth Common.
MO, PAN, 8.	6844	*Rhynchospora armerioides* Presl Common. *Rh. globosa* (HBK.) Roem. & Schult.
MO, PAN, .	6845	Cyperac. *Bulbostylis juniformis* (HBK.) Lindman Thinly scattered.
MO.	6846	Legume. *Eriosema crinitum* (HBK) G. Don Rare. det. R. Liesner 1974

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MO, PAN, . 6847 Utricularia subulata L. det. P. Taylor, 1976.
On damp mud in pocket on boulder.
Flowers yellow (7.5/9).

6848-6870 Damp area along stream.

MO, PAN, 12. 6848 Andropogon bicornis L. det. G. Davidse 1974
Common only along stream. ~~and~~
Clumps.

MO, PAN, 2. 6849 Fuirena umbellata Rottb. det. G. Davidse

MO, PAN, 8. 6850 Gram. Ischaemum latifolium (Spreng.) Kunth.
From dense network of rhizomes
and roots. det. G. Davidse 1974

MO, PAN, 5. 6851 Eleocharis elegans (HBK.) Roem. & Schult.
det. G. Davidse, 1975

MO, PAN, 4. 6852 Cyperus haspan L.

MO, PAN, 3. 6853 Dichromena Rhynchospora nervosa (Vahl) Boeck.
det. G. Davidse base of bracts white. Some with
proliferating heads (none collected)

MO, PAN, 8. 6854 Scleria anceps Liebm. det. E. L. Core 1975

MO, PAN, 4. 6855 Paspalum plicatulum Michx. det. G. Davidse 1974

F, , , . 6856 hepat.
On soil.

MO, PAN, . 6857 Cyperus Kyllinga brevifolia Rottb. det. G.D.

MO, PAN, 6. 6858 Cyperac. Scleria nutans Kunth det. G. Davidse
Base of stems, rings on rhizomes and roots
are pink. Rhizome sweetly fragrant,
much like Acorus calamus.

MO, PAN, 7. 6859 Cyperaceae Scleria purdei Clarke det. G. Davidse,
~~1978~~ 1975
Only a few stems from each rhizome.

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17 PPV 195-6/603-6 det. G. Davidse 1974

MO, PAN, . 6860 ? Digitaria Axonopus compressus (Sw.) Beauv.
Dense upright clump. Fruit mostly fallen.

MO, PAN, 5. 6861 ? Rhynchospora rugosa (Vahl) Gale
det. G. Davidse, 197-

6862-6865 Damp rocks along stream.

MO 6862 moss.

MO 6863 moss

F, , , . 6864 hepat.

F, , . 6865 Anthoceratacea

MO, PAN, 6. 6866 Crotalaria pilosa Mill. det. Liesner 1973
Flowers yellow. Pods inflated but only one plant seen with fruit.

MO, PAN, 10. 6867 Paspalum pilosum Lam. det. Davidse 1974
dense clump. Thrasya hitchcockii Chase det. G. D., 1985

MO. 6868 Cassia simplex Standl. det. Liesner 1973
Rare. Flowers dull yellow, leaves sensitive.

MO. 6869 Rub. Borreria ocymoides (Burm. f.) DC. det. J. Dwyer 1974
In hollow on boulder. Spermacoce prostrata Aubl. det. G. Davidse 1974

MO, PAN, 3. 6870 Gram. Lasiacis procerrima (Hack.) Hitchc.
Long stems with "stilt roots." Leaves soft fuzzy.

~~6871~~ 6871-6872 On slope with 6842-6846

MO, PAN, . 6871 Lab. Hyptis lantanaefolia Poit. det. R. Liesner 1974
Plant odorless. Calyx white, corolla white with purple spots on two

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17PPV 195-6/603-6

upper lobes.

MO, PAN. 6872 Rub. Declieuxia fruticosa (Willd.) Kfze det. J. Dwyer 1974
Flowers white.

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17 PPV 195/606

6873-6875 Roadside along highway on E side of Cerro Campana. alt. 650 m.

MO, PAN, 6. 6873 Paspalum plicatulum Michx. det. G. Davidse 1974
MO, PAN, 5. 6874 Digitaria axonopus purpusii (Mez) Chase " "
MO, PAN, 4. 6875 Paspalum minus Fourn. " "
Flat to the ground.

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ca. 17PPV 22/621

6876-6880 Weedy roadside and pasture, 2 km. S of Campana along road up Cerro Campana. alt. 300 m.

MO, PAN, MAD, 5. 6876 Comp. Austroeupatorium inulaefolium (HBK.) K. & R.
MADw 32378 (w) "Shrub" 2.5 m. tall. Young stems light green with dark green spots. Flowers white, fragrant. R.L. 1977

MO, PAN, 3. 6877 Dioscorea cymulosa Hemsl. det. F. Ayala 1976
Vine to 3 m. in shrubs. Tepals white.

MO, PAN, 5. 6878 Comp. Lasianthaea fruticosa (L.) K.M. Becker
Viny. To 3 m. Rays yellow, disc orange, fragrant.

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ca. 17PPV 22/621

MO, PAN, MAD, 8. 6879 *Mimosa somnians* H+B. R.L. 1975

MADw 32379 @ 2 m. tall spreading, finely branched shrub. Inflorescences pink. Leaves closed for night.

MO, PAN, 4. 6880 Comp. *Centrantherum punctatum* Cass. ~~Low her~~ Spreading, low herb. Flowers purple (10/4).

Sept. 9, 1973

Canal Zone, Panamá
17PPA 483-4/022

6881-~~6883~~ 6884 Summit Gardens and vic. alt. 80 m.

MO, PAN, 12. 6881 Eleocharis retroflexa (Poir.) Urb.
Thick growth in large unused planting tub. det. G. Davidse, 197-

MO, PAN, 7. 6882 Paspalum nutans Lam. det. G. Davidse 1974
Creeping and rooting at nodes. Shady lawn.

~~6883~~ 6883-6884 Forest at NW edge of gardens.

MO, PAN, 3. 6883 Fern. Adiantum lucidum (Cav.) Sw. D.L. 1977

MO, PAN, 7. 6884 Lauraceae. Phoebe mexicana Meissn.
Small tree 12 m. tall along Gaillard Hwy. Fruit green, then shiny black. Inflorescence red, calyx red above, yellow green on underside. Flesh of ripe fruit the same color and consistency as that of Persea americana but aromatic tasting.
det. L.R. Holdridge 1977

58 Sept. 10, 1973

Canal Zone, Panamá
17PPA 484/036

6885-6887 Top of Semaphor Hill, 1 Km. N of Summit Gardens. ~~Second growth~~ Secondary tropical moist forest. Alt. 240 m. ~~Rop~~

MO, PAN, MAD, 11. 6885 Piper villiramulum C.DC. det. J. Conrad 1974
MADw 32380 @ shrub 6 m. tall. Spikes first horizontal, then erect.

MO, PAN, 4. 6886 fern. Thelypteris falcata (Liebm.) Tryon
Leaves to 2 m. long, with faint fragrance reminiscent of Comptonia peregrina. D.L. 1977

MO, PAN, 6. 6887 Fern. Blechnum occidentale L. f. occidentale
Roadside bank. Note long slender "runner" rhizomes. D.L. 1977

Sept. 11, 1973

Prov. Panamá, Panamá
17PPV 456-7/851-6

6888-6904
6905 Secondary tropical moist forest along road. alt. 40-50 m. 6 km. SW of Arraiján along old road to Bique.

MO, PAN, 6. 6888 Olmedia aspera R.+P.
Leaning shrub 4 m. tall. Fruit bright orange with pale orange watery juice. 1 cm. diam., 7 mm. tall.

MO, PAN, 6. 6889 Legum. Inga punctata Willd. det. R. Liesner 1974
Small tree 5 m. tall. Stamens white, flowers fragrant.

MO, PAN, 3. 6890 Rub. Pittoniotis tricantha Griseb. ! J. Dwyer 1974
Shrub 7 cm. dbh., 5 m. tall. Inflorescence hanging, those of upper branches about ½ m. from ~~tip~~ tip of branch. Fruit green, turning red.

MO, PAN, 11. 6891 Ficus citrifolia P. Mill.?
Small tree 6 m. tall, 15 cm. dbh.

MO, PAN, MAD, 10. 6892 Lindackeria laurina Hemsl.
MADw 32381 (w) 4 m. tall, 5 cm. diam. shrub. Some in area up to 10 m. tall, 25 cm. dbh. Petals white, flowers fragrant.

MO, PAN, 10. 6893 Cyperus simplex HBK.
Damp area. det. G. Davidse, 1985

MO, PAN, 3. 6894 Fern. Cyclopeltis semicordata (Sw.) J. Sm.
Bank of tiny stream. D.L. 1977

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MO, PAN, MAD, 3. 6895 Piper grande Vahl det. J. Conrad 1974
Slender shrub 1.5 m. tall.

MO, PAN, . 6896 Legume. Pithecolobium rufescens (Benth.) Pitt. ! R. Liesner 1974
4 m. tall sprout from 15 cm. diam. stump. Fruit bright red.

MO, PAN, 8. 6897 Piper villiramulum C.DC. det. J. Conrad 1974
Shrub 3 m. tall. Spikes erect.

MO, PAN, 9. 6898 Rub. Contarea hexandra (Jacq.) Schum.
Shrub 3 m. tall. Fruit green, held erect.

MO, PAN, 4. 6899 Bauhinia hymenaeifolia Tr. ex Hemsl. det. R. Liesner 1973
Large woody vine to at least 5 m. Petals white, the standard green at base within.

MO, PAN, 2. 6900 Solanum asperum ~~Hald.~~ L.C. Rich. ! D'Arcy XII. 1973
Slender shrub 2 m. tall.

MO, PAN, 6. 6901 Rub. Faramea occidentalis (L.) Rich. det. J. Dwyer 1974
Shrub 6 m. tall. Fruit green.

MO, PAN, 7. 6902 Dolicocarpus olivaceous Sprague & Williams ex Standl.
Large tangled woody vine to tops of trees. Many fruits molding on the vine. Fruits green, a few turning red, bright red on inside, aril white.

MO, PAN, 4. 6903 Asertia haenkeana DC. det. J. Dwyer 1974
Shrubs 2 m. tall in roadside thicket. Inflorescence orange (2.5/6), corolla above yellow (7.5/9) ~~above~~ before opening, turning orange (5/7)

Sept. 11, 1973

Prov. Panamá, Panamá
17PPV 456-7/851-6

MO, PAN, 3. 6904 *Apeiba tibourbou* Aubl. det. R. Liesner 1974
Spreading tree 6 m. tall. Petals yellow (5/8), insides of sepals yellow-green (5/8). Flowers ~~[illegible]~~ with thick sweet odor.

US. 6905 Graphid.
On *Lindakeria laurina* (# 6892)

Sept. 12, 1973

Canal Zone, Panamá
17PPA 475-8/032-7

Tropical moist forest

6906-6928 Along Río Masambi Grande, 1.5 km. NW of Summit Gardens. alt. 75 m.

6906-6907 1.5 m. from ground on small branch.

MO 6906 moss

MO 6907 moss

MO, PAN, MAD, 23. 6908 Moraceae. Sorocea affinis Hemsl. ! J.C. 1974
MADw 32382 ⓦ Shrub 3 m. tall, 3.5 cm. diam. Sap milky, fruit green.

US, , . 6909 lichen
On trunk and branches of 6908.

6910-6914 Trunk of huge tree.

MO 6910 moss.
Common from 0.5 to at least 3 m. from ground.

US, , , , , , 6911 lichen
, . from ground to 1 m.

US. 6912 lichen
Thallus dark green. ½ m. from ground.

MO, , . 6913 Hymenophyll. Trichomanes nummularium (v.d. Bosch) C. Chr.
1 m. from ground. D.L. 1977

F, . 6914 hepat.
Scattered. Almost luminous bright yellowgreen when seen from proper angle.

Sept. 12, 1973

Canal Zone, Panama
17PPA 475-8 / 032-7

MO, PAN, . 6915 Arac. Anthurium gracile (Rudge) Lindl. det. Croat, 1987
On fallen branch. Roots fleshy, green, forming a tangled mass. Spathe and spadix succulent green and dull red. Midrib prominent above on leaf.

~~6917~~ 6916-6918 On palm leaf overhanging the river.

US, , . 6916 ? ~~Hymenium~~ Coenogonium
US, , , , . 6917 lichen.
F, , , . 6918 hepat.

F, , , . 6919 hepat.
On twigs of Olmedia aspera 2 m. above river.

6920-6923 Large dead tree leaning over river.

MO, PAN, 8. 6920 Selaginella sertata Spring (S. horizontalis (Jacq.) Spring) det. K. Fm., 1985 Lellinger, 1983
MO, PAN, 7. 6921 Cyperus simplex HBK. det. G. Davidse, 1975
Inflorescence branches lax.
MO, 5. 6922 Fern. Polypodium wagneri Mett. det. Lellinger 1983
F. 6923 hepat. L. pectinatum L. det. Weff, 1983

MO, 9. 6924 Doliocarpus olivaceous Sprague & Williams ex Standl.
Large, tough woody vine ~~with~~ to at least 6 m.
Leaves brittle. ~~and aromatic~~. All the ripe fruits have been chewed. Turning red

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Canal Zone, Panamá
17PPA 475-8/032-7

outside and bright red (2.5/5) within.
Fruit to 2cm. diam.
6925-6927 4 m. from ground on tree trunk.

MO 6925 moss.
~~Forming~~ Growing horizontally with branches sticking out from trunk at right angles.

US, . 6926 lichen

US, , . 6927 lichen

US. 6928 lichen
On Doliocarpus olivaceous (#6924), 5 m. from ground.

It was late afternoon as I followed this beautiful little stream up from the military road which goes to the radar station on the top of Semaphor Hill. ~~So~~ Just before coming to the big fallen tree (#6920-6923) I noticed two large "otter" swimming toward me in a pooled up part of the stream. They spotted me, I froze and they would swim toward me, ~~poke their~~ stand up out of the water, huff and then dive down and away and then come back and repeat the process. I stood there frozen watching them, the pool, mossy rocks, huge tree with the curious huge tuft of leaves of a Dustavia superba overhanging the scene.
"... perhaps never again to be disturbed till the passing of many years..."

Sept 12, 1973

I have been sadly remiss in not noting down as the days go by what I was thinking. The magnificent view from Cerro Campana, not to mention its ~~the~~ own awesome cliffs and curious "grasslands", the rewarding collecting of Sept. 11, 1973 with Cerro Cabra which I previously had climbed 1/3 of the way to its frequently cloud enveloped top in view as I pressed strange plants - all this should be somewhere recorded. But... two impediments keep me from putting my collecting notes into a wider ~~[illegible]~~ context. The first is the chilling effect produced by knowing that one day a copy of this notebook will be at MO. The other is the general discouragement of not having a drier fixed up yet - I'm just marking time and here it is a month already and I haven't gotten 20 km. from the zona.

 Sept. 13, 1973

Canal Zone, Panamá
17PPA 479/025

6929-6931 Closely mowed roadside ½ km. NW of ~~Gaillard Highway~~ Summit Gardens along Gaillard Highway. alt. 90 m.

MO, 5. 6929 Rub. Borreria ocimoides (Burm.) DC. det. J. Dwyer 1974
Corolla white. Spermacoce prostratus Aubl.

MO, " " 6930 Pectis swartziana Hess. R.L. 1976.
Foliage strong smelling.

MO, 5. 6931 Polygala longicaulis HBK. det. R. Liesner 1974
Common in places. Flowers odorless, light bright purple.

6932-6934 Open rocky grassy area between Gaillard Highway and RR. Dominated by Hyparrhenia rufa.

MO. 6932 Habenaria
Flowers yellowish green, odorless. Terrestrial, rare.

MO, 18. 6933 Hackelochloa granularis (L.) Kze. ! G. Davidse 1974

US, " " " " 6934 Cladonia
" " "
On bare clay, especially on clumps of Andropogon.

Noted a Piper and a Genipa for future wood collections when I get my saw and machete back; they're in the jeep in Panamá City where the jeep is having new brake linings ~~installed~~ installed.

Sept. 13, 1973

Canal Zone, Panamá
17PPA ~~#171~~ 474-6 / ~~033~~ 030-33

6935-6952 Along Río Masambi Grande between Gaillard Hwy. and road to radar station. 1½ Km. NW of Summit Gardens. Small stream in secondary tropical moist forest. alt. 70 m.

6935-6938 Leaning palm trunk.

MO 6935 moss.
Common on leaning palm trunk 0.5-2 m. from ground.

F, 6936 hepat.
1.5 m. from ground on leaning palm trunk. Bright light green.

MO 6937 Octoblepharum albidum Hedw.
1-1.5 m. from ground.

MO 6938 moss.
0.5 m. from ground.

MO. 6939 Aroid.
Epiphyte 10 m. from ground. Spathe and spadix purple. Petiole and peduncle terete.

MO 6940 moss. Callicostella pallida (Hornsch.) Jaeg.
On rotten log.

MO 6941 moss.
Covering large areas of matted roots subject to frequent flooding.

 Sept. 13, 1973

Canal Zone, Panamá
17PPA 474-6/030-033

US, . 6942 lichen
1 m. from ground on small tree trunk.

6943-6946 On boulders in stream.

F, , , , , . 6943 ~~moss? hepat?~~ Neckeropsis disticha (Hedw.) Fleisch.

US, . 6944 lichen
Thallus dull dark green.

US, , . 6945 lichen
Thallus dark dull purplish, apothecia pale brown.

F. 6946 hepat.

MO, MAD, 8. 6947 Markea ~~panamensis~~ Standl. M. ulei (Damm.) Hunz. det. D'Arcy XII. 1973
MADw 32383 ⓦ 12 m. from ground. Semi-viny epiphyte from ~~mass of~~ cluster of soft juicy tubers the size, shape and color (brown) of potatoes, but ~~more juicy~~ softer and more juicy. Corolla pale yellow, purple on outside below. Fruit yellow with purple tip and purple spots.

MO 6948 Octoblepharum albidum Hedw.
15 m. from ground on root mass of an epiphytic bromeliad.

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Canal Zone, Panamá
17PPA 476/033

6949-6952 Partly shaded wooden bridge over Rio Masambé Grande on road to radar station. 1.5 km. NW of Summit Gardens.

MO 6949 Octoblepharum albidum Hedw. forming cushions on sides.

MO 6950 moss. On woodland gravel.

MO 6951 moss. Sides.

MO 6952 moss.

17PPA 474/030

MO, MAD, 10. 6953 * Ponzolzia obliqua Gaud. det. R. Liesner 1974
MADw 32384 (w) Viny shrub with very soft stems. To 4 m. in roadside thicket, Gaillard Hwy. 1½ km. NW of Summit Gardens. alt. 70 m.

Sept. 14, 1973

Canal Zone, Panamá
17PPA 483/022

while waiting for the bus:

6954-6955 Wooden signpost, Summit Gardens. alt. 80 m.

US, . 6954 lichen
US, . 6955 lichen

Prov. Panamá, Panamá
17PPV 614/933

while waiting for Dra. Mireya Correa to get back from lunch:

6956-6959 On branch of ~~Enterolobium cyclocarpum~~ Enterolobium cyclocarpum. large cult. mimosoid legum. on University of Panamá campus, Panamá City. alt. 30 m.

US, , . 6956 lichen
US, . 6957 lichen
US, , . 6958 lichen
US, . 6959 lichen

Sept. 15, 1973

Prov. Colón, Panamá
17PPA 535/325

6960-6966 Roadside thickets. ca. 2 km NW of Salamanca at bridge over Quebrada Bonita on road to Rojas. alt. 90 m.

MO, 6. 6960 Convolv. Ipomoea phyllomega (Vell.) House det. D.F. Austin 1974
Vine to 8 m. Corolla light purple, odorless.

MO, MAD, 6. 6961 Trema micrantha (L.) Blume det. R. Liesner 1974
MADw 32385 (w) Shrub 4 m. tall. Flowers greenish, fruit green, turning orange.

MO, MAD, 10. 6962 Piper marginatum Jacq. det. J. Conrad. 1974
MADw 32386 (w) Slender shrub 4 m. tall, very aromatic. Inflorescences arching, creamy white when young.

MO, MAD, 12. 6963 Clibadium asperum (Aubl.) DC. R.L. 1976
MADw 32387 (w) Shrub 4 m. tall. Flowers white. Heads turning green and juicy.

MO, 9. 6964 Cestrum racemosum R.+P. det. D'Arcy XII. 1973
Large shrub 7 m. tall, 15 cm. dbh. Berries green, a few turning purple.

US. 6965 lichen
1 m. from ground on Cestrum racemosum (# 6964)

MO, MAD, 12. 6966 Solanum ochraceo-ferrugineum (Dun.) Fern. det. D'Arcy XII. 1973
MADw 32388 (w) Shrub 3 m. tall. Corolla white, berries green.

I waited for the rain to quit,

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Prov. Colón, Panamá

pressing plants in the back of the jeep. I then tried going up the next hill but with the recent rain and the slippery wet red clay, at the top I decided to go back, seeing that the road got worse on ahead. I backed down and without 4-wheel drive, would have gotten stuck trying to turn around. Since this was as far as I was going to get, I decided to collect some more plants.

17PPA 533-4/327-330

6967-6977 Disturbed, pastured remnants of tropical moist, forest along Quebrada Bonita. 3 Km. NW of Salamanca. alt. 150 m. 13 Km. NE of Buena Vista

MO, MAD, 2. 6967 Cassia fruticosa Mill. det. R. Liesner 1973

MADw 32389 (w) Broken over shrub with 15 cm. diam. trunk. Wood from an upright branch. Only one flower seen with petals fully spread.

MO, 8. 6968 Gram. Panicum trichoides Swartz det. G. Davidse 1974 Along path.

MO, 5. 6969 Calathea insignis Peters. 3 m. tall. Flowers yellow, bracts yellowish green, seeds blue.

MO, 4. 6970 Solanum allophyllum (Miers) Standl. Slender herbaceous "shrub" 1.5 m. tall, the single soft stem dividing into 3 branches at 1 m., very ~~[illegible]~~ similar to spp. of Cyphomandra. Stem green and purple mottled.

= Cyphomandra allophylla (Miers) Hemsl. det. D'Arcy XII. 1973

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17PPA 533-4/327-330

det. Job Kuijt 1974

MO, 7. 6971 Loranth. Struthanthus orbicularis (HBK) Blume
Vine to at least 6 m., draped over shrubs. Fruit dull brown, held erect, with milky sap within.

MO, 4. 6972 (Carludovica) Dicranopygium crinitum Harling
Tightly attached to rocks along stream. Flower white, purple at base of flower parts. det. Hammel, 1985

MO 6973 moss.
In open on huge rotting burned log.

MO, 3. 6974 Urtic. Laportea aestuans (L.) Chew. det. R. Liesner 1974
In open. Non-stinging.

MO, 6. 6975 Acacia melanoceras Beurl. ? ! R. Liesner 1974
Clump of shrubs to 10 m. tall, 25 cm. dbh, stems covered with inflated ~~stem spines~~ thorns. Infested by fierce ants with painful but short lasting stings. det. R. Liesner 1974

MO, 5. 6976 Legum. Calliandra glaberrima (Benth.) Britt. + Killip.
Spreading shrub across stream, to 2 m. tall.

MO, 5. 6977 ? Spondias radlkoferi D. Smith det. T. Croat 1974
Tree 10 m. tall, 15 cm. dbh. Fruit green, generally on a short branch at base of a shoot 20-50 cm. long. Foliage with strong resinous odor.

Sept. 15, 1973

Prov. Colón, Panamá
17 PPA 534-6/324-6

6978-6994, 7000-7001 Brushy weedy pasture along stream, Quebrada Bonita, 2 Km. NW of Salamanca. alt 90 m. near bridge on road to Rojas. 13 Km. NE of Buena Vista.

MO, MAD, 9. 6978 Lantana trifolia L. det. R. Liesner, 1975
MADw 32390 (w) Many stemmed clump, 2 m. tall. Berries bright light purple.

MO, MAD, 8. 6979 Pothomorphe
MADw 32391 (w) 1.5 m. tall.

MO, MAD, 8. 6980 Piper tuberculatum Jacq. det. J. Conrad 1974
MADw 32392 (w) Shrub 2.2 m. tall. Spikes erect, yellowish.

MO, . 6981 Amaryllid Hymenocallis pedalis Herb. vel sp. aff. Along stream. Bulb and roots white. Flowers fragrant, base of tepals, stamens and pistils white. Tip of tepals green, end of stamens and pistils dark green, pollen orange. det. R.L. 1979

MO, , . 6982 Cissus sicyoides L. Det. T. Croat, 1975
Vine. Flowers greenish yellow.

MO, MAD, 10. 6983 Piper villiramulum C.DC. det. J. Conrad 1974
MADw 32393 (w) Shrub 2 m. tall, spikes erect.

MO, 5. 6984 Ludwigia octovalis (Jacq.) Raven det. P. Raven
On sandbar along stream. Petals yellow, readily falling.

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17PPA 534-6/324-6

MO, 6. 6985 Amaranth. ~~?~~ Alternanthera sessilis (L.) R.Br.
On sandbar. det. R. Liesner 1974

MO, 7. 6986 Olmedia aspera R.&P.
Clump of leaning stems 4 m. high, along stream. Only 1 bright orange reflexed "fruit" seen. Stigmas white.

MO, MAD, 7. 6987 ~~Rub.~~ Aegiphila panamensis Mold. det. R. Liesner, 1975
MADw 32394 (w) Spreading shrub 2 m. tall. Corolla light greenish yellow.

MO 6988 moss.
Large rotten log in thicket.

MO 7000 moss.
Large rotten log in thicket.

MO, MAD, 10. 6989 Capsicum annuum L. var. avicular (Dierb.) D'Arcy & Eshbaugh. det. D'Arcy, XII.1973
MADw 32395 (w) Spreading shrub 1.5 m. tall, Fruit green, erect, extremely pungent.

MO, MAD, 14. 6990 Capsicum annuum L. var. annuum det. D'Arcy, 1973.
MADw 32396 (w) Spreading shrub 2.5 m. tall, the base a trailing stem 2 m. long. Corolla greenish white, anthers blue. Fruit erect, green (one seen that was bright red and juicy), extremely pungent.

MO, 19. 6991 Verb.? Callicarpa acuminata HBK.
Stems in a clump, up to 6 m. tall, ~~[illegible]~~ from 10 cm. diam. stump. Fruit juicy, turning various shades of purple.
det. R. Liesner, 1974

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Prov. Colón, Panamá
17PPA 534-6/324-6

MO, 6. 6992 *Paspalum virgatum* L. det. G. Davidse 1974
Upright clumps. Roadside and pasture.

MO, 11. 6993 Comp. *Melampodium divaricatum* (L.C. Rich.) DC.
Roadside. Weak stemmed, bushy, 1 m. tall.
Flowers yellow. R.L. 1976

MO, 3. 6994 *Erythrina Berteroana* Urban det. B.A. Krukoff 1974
4 m. tall shrub as a living fence post.
Inflorescence dead but still with a
few bright red seeds.

~~6995~~

MO, 8. 7001 *Cyperus odoratus* L.
Damp open pasture.
det. G. Davidse, 197-

US, , , , . 6998 lichen
base of *Gustavia superba*.

F, , , , , . 6999 hepat. *Neckeropsis undulata* (Hedw.) Reicht.
On twigs of shrubs, 3 m. above stream.

Sept. 15, 1973

Prov. Colón, Panamá
17PPA 482/264

6995-6999, 7003-7005 Tropical moist, alt. 100 m. Forest remnant along stream cutting through Filo de la Mina. 3 km. N of Cement Factory, 5 km. E of Buena Vista.

US, . 6995 lichen.
On twig along stream. Probably fallen from tree.

MO, 5. 6996 Campelia zanonia (L.) HBK.
Trailing, stems with "stilt roots"
Corolla white with purple spot on outside at base.

MO, 4 . 6997 Carludovica drudei Mast. det. R. Eriksson, 1986
Leaves 3 m. tall, stemless. Leaves aromatic. Base of plant pink, when cut exuding a gelatinous substance. At maturity inflorescence peeling back from top, exposing the bright red orange juicy odorless pulp surrounding the fruits and central column.
Fresh inflorescences ca. 4.5 cm. diam, shrinking considerably on drying.

7003-7005 On leaves of Carludovica (#6997)

F, 5. 7003 hepat.
F. 7004 hepat
F, , . 7005 hepat.

This is a very nice remnant and I still didn't get the fruit of the tall tree which had originally attracted my attention.

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7000 see p. 75
7001 see p. 76
7003-7005 see p. 77

Canal Zone, Panamá
17PPA 483/022

US, . 7002 lichen.
Wooden signpost at Summit Gardens.
alt. 80 m.

17PPA 48/024

7006-7012 Grassy open bank along Gaillard Hwy, 1/2 Km. NW of Summit Gardens.

MO, MAD, 18 . 7006 *Piper aduncum* L. det. J.C. 1974
MADw 32397 ⓦ Shrub 4 m. tall.

7007-7012 On trunk of Piper #7006

F, . 7007 hepat.
F. 7008 hepat.
US, . 7009 lichen
US. 7010 lichen
US. 7011 Graphid
F, , , . 7012 hepat.
a mixture of spp.

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7013-7042 4.5 km. N of Lago Cerro Azul. by road.
Premontane wet forest. alt. 675 m.
vic. Finca Vega.

MO, MAD, 4. 7013 Rub. Psychotria capitata R. + P. det. J. Dwyer 1974
MADw 32398 (w) Slender shrub 2 m. tall. Stems hard, leaves stiff. Berries dark purple.

MO 7014 moss.
Covering base of stem of 7013.

MO. 7015 fern Cochlidium linearifolium (Desv.) Maxon ex C. Chr.
On small stump. D.L. 1977

7016-7018 on Rotten logs.

MO 7016 moss.
MO 7017 moss
MO, . 7018 Hymenophyll.

MO, 10. 7019 Comp. Mikania hookeriana DC. R.L. 1976
Long trailing vine. Leaves thick and glossy when fresh, resembling an Asclepiad, much changed upon drying. Flowers white, fragrant, much visited by butterflies.

MO, . 7020 Bactris coloniata Bailey
MADw 32399 (w) Slender palms 5 m. tall. Trunk with downward pointing spines, for the most

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part ~~rather~~ rotting, especially below. A few thick stilt roots developing at the base. det. G. de Nevers + Henderson, 199_

7021-7022 on trunk of Bactris 7020.

MO 7021 moss

E, . 7022 hepat.

MO. 7023 fern. Grammitis mitchellae (Baker) Seymour tree trunk. det. Lellinger, 1983

MO, , , , 7024 Palm.

, . MADw 32400 (w) Slender, 3 m. tall. Inflorescence hanging, rachis red.

MO 7025 moss?

base of 7024.

MO, . 7026 ~~Dog~~ Voyria tenella (Hook.) Mieq. det. T. Elias 1973

Delicate white stemmed herb with "roots" loose in leaf litter, occasionally in the red clay beneath. Corolla blue with yellow throat.

MO, , . 7027 Piper bella Yuncker vel sp. aff. det. J. Conrad 1974

Trailing. Aromatic.

MO 7028 moss.

On log on ground.

MO, MAD, 8. 7029 Erythroxylum citrifolium A. St-Hil. shrub det. T. Plowman 1978

MADw 32401 (w) ~~Small~~ leaning ~~tree~~ 4 m. tall. Inner bark bright reddish. Fruit green.

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US, , , , . 7030-7031 on stem of 7029
7030 lichen 0.5 m. from ground.
US. 7031 lichen
1.5 m. from ground.

MO, MAD, , . 7032 Piper via-chicoense Yuncker det. J. Conrad 1974
MADw 32402 (w) Clump of slender shrubs 2 m. tall. Spikes erect, green.

MO, MAD, , . 7033 Salacia cf. jurnana Loes. det. A. Gentry, 1975
MADw 32403 (w) Shrub 5 m. tall. Leaves thick, green above, yellowgreen below. Fruit with irregular longitudinal dark green and very light green stripes. Fruit to 3.5 cm. diam, orange around the seeds.

MO. 7034 Aroid. Syngonium macrophyllum Engl.
Epiphyte with milky juice. Spathe green.
(○) = cross section of petiole. det. T. Croat, 1975

MO 7035 moss.
top of small rotting stump.

MO, , , . 7036 Palm.
MADw 32404 (w) 4 m. tall, common. Inflorescences hanging, peduncle and rachis red, fruits green then black with orange spots, purple and juicy within.

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MO, MAD, , , 7037 Cephaelis
, . MADw 32405 (w) slender shrubs 2.5 m. tall. Flowers yellow, bracts bright red (yellow-red 2.5/6).

MO, . 7038. Palm. Chamaedorea macrospadix Oerst.
MADw 32406 (w) slender, 2.5 m. tall. Inflorescences from old leaf sheathes and lower on stem. det. M. Grayum + Hodel

7039-7042 On large fallen tree

MO. 7039 fern. Grammitis blepharodes (Maxon) det. D.L. Seymour 1977
MO, , , . 7040 fern.
MO. 7041 Orchid. Dichaea trulla Reichb. f. det. Dressler 1974
MO. 7042 fern.

While going up a steep hill near one of the numerous chicken ranches, the jeep stopped, apparently out of gas and I had a hard time starting it. After turning around, I collected until about sunset, drove down the mountain in the fog and dark, came across an accident before Tocumen airport, gave two guys a ride back to Panamá in the rain in the damp back of a jeep loaded with palms and plastic bags, hit a couple of bad chuck holes, and by the time I got back to Summit the jeep was stalling.

Sept 18, 1973

Canal Zone, Panamá
ca. 17PPA 480/024

MO, 12. 7043 Malpigh. Tetrapterys calophylla Adr. Juss. var. glabrior Benth.
Large vine in thicket along RR. Petals yellow in bud and early anthesis, then turning bright orange-red. Bracts dull purplish green. ½ km. W of Summit Gardens.
alt. 75 m. det. W.R. Anderson 1976.

17PPA 474/031
MO, MAD, 19. 7044 Genipa americana L. det. J. Dwyer 1974
1½ km. NW of Summit Gardens.
MADw 32407 (w) Leaning shrub 4 m. tall at edge of woods at Gaillard Hwy. at Rio Masambe Grande bridge. Fruit green, with brown spots, the largest about 4 cm. diam.
alt. 70 m. Wood and inside of fruit white when fresh, turning black.
I was just exploring with this last in mind and I also went back to get a wood specimen from the Markea panamensis I had collected sub # 6947 on Sept. 13, 1973. I didn't realize at the time that it was Solanaceae (although I had suspicions) and didn't bother to get a wood specimen of the stems which are, surprisingly, definitely woody.
I found some other shrubs to cut down for wood specimens including a very large Piper. There are a number of interesting palms around to be collected when I've got lots of time and no transportation

Sept. 19, 1973

Canal Zone, Panamá
17PPA ca. 488/025

7045-7046 Summit Gardens. alt. 80 m.

MO, , , . 7045 Cestrum latifolium Lam. det. D'Arcy XII.1973
2.5 m. tall shrub in thicket, probably not planted. Flowers yellowish green.
Foliage fetid, quickly wilting.

17PPA 485/022
MO, , . 7046 Rub. Morinda citrifolia L. det. J. Dwyer 1974
Cult. shrub 5 m. tall with thick tortuous branches. Corolla white. Fruit somewhat irregular, when ripe ca. 11cm. x 7 cm., white and juicy with brown seeds.
The label says "Morinda citrifolia"

17PPA 390/085

I finally found Bustavia grandibracteata, growing side by side with G. superba along a pond. Between power poles 28-17 and 28-16 along the RR, ca. 1.5 km. W of Gamboa there is a path leading right to them. Scott Mori and I would have saved ourselves a long walk in 1971 if we'd seen these.

7047-7057 Thicket along Panamá Canal, 3 Km. W of Gamboa. alt. 30 m.

MO, MAD, 14. 7047 Cestrum latifolium Lam. det. D'Arcy XII.1973
MADw 32408 (w) Shrub 4 m. tall. Flowers light yellowish green, odorless (5:00 P.M.)

Sept. 19, 1973

Canal Zone, Panamá
17PPA 390/085

7048-7056 on stems of shrubs

US, , , , . 7048 lichen
Apothecia flesh-colored.

US, . 7049 Graphid?

US, . 7050 lichen

US. 7051 Graphid.

US. 7052 lichen

MO 7053 moss Taxithelium planum (Brid.) Mitt.

US, , . 7054 lichen

US, , . 7055 lichen

US, , . 7056 lichen
on Cecropia

MO 7057 moss. Taxithelium planum (Brid.) Mitt.
Covering mat of wave-swept roots.

17PPA 407/082

MO, 19. 7058 Pithecolobium rufescens (Benth.) Pitt. ! R. Liesner 1974
Low bushy tree 4 m. tall from a larger trunk leaning over Panamá Canal, 2 km. W of Gamboa. alt. 30 m. With abundant fruit. Pods coiled, white within, bright red on outside and with black seeds dangling on short threads. Fruit readily falling from tree and seeds from fruit. Seeds soft, with green cotyledons.

Sept. 19, 1973

Canal Zone, Panamá

After going out W of Gamboa without my notebook, thinking it might be lost (it had been left at home at Summit Gardens) I got feeling guilty and brought my permanent notebook up to date once again, ~~also~~ having from Sept. 15, 1973 to now to catch up. I hate to think of doing all my 1973 Mexico trip some day in the future.

Sept. 20, 1973

7060-7065 - see p. 88.

Canal Zone, Panamá
17PPA 476/027

MO, MAD, 29. 7059 Piper reticulatum L. det. J. Conrad 1974.
MADw 32409 (w) Large shrub 8 m. tall. (10 cm. diam.) Abundant clear sap running from cut stump. Spikes erect. Nodes on upper branches conspicuously thickened. Thin woods between Gaillard Hwy and RR, 1 Km. NW of Summit Gardens. alt. 70 m.

17PPA 474/031

7066-7069 Edge of woods, Gaillard Hwy at Río Masambi Glade, 1½ Km. NW of Summit Gardens. alt. 70 m.

MO, MAD, 14. 7066 Rub.
MADw 32410 (w) Shrub 3 m. tall, branches dark green. Young leaves reddish, translucent. Flowers yellow, berries green. Inflorescence branches orange during anthesis, turning red when in fruit.

7067-7068 On # 7066.

US, 7067 lichen
US. 7068 lichen.

MO, MAD, 20. 7069 Rub. Chomelia spinosa Jacq. det. J. Dwyer 1974
MADw 32411 (w) Multi-stemmed shrub 5 m. tall. Corolla white, fruit green. Flowers with heavy sweet odor like some spp. of Cestrum.

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Canal Zone, Panamá
17PPA 476/027

7060-7065 On Piper # 7059

US, . 7060 lichen
US. 7061 lichen
US. 7062 lichen
US. 7063 lichen
US, . 7064 lichen
US, , . 7065 lichen

Sept. 26, 1973

Canal Zone, Panamá
ca. 17PPA 398/109

7070-7085 Secondary tropical moist forest along Pipeline Road, 4 km. NW of Gamboa. alt. 50 m.

MO, MAD, 16. 7070 melastom. Miconia borealis Gleason det. R. Liesner 1974
MADw 32412 (w) shrub 8 m. tall at edge of forest. Flowers white.

MO, MAD, , . 7071 Siparuna guianensis Aubl. det. S. Renner, 1996
MADw 32413 (w) shrub 2.5 m. tall at edge of forest. Fruit turning red above, green below. When ripe splitting and the lobes recurving exposing the yellow pulp with dark seeds with fleshy white aril.

US, . 7072 Graphid.
On Siparuna #7071.

MO, MAD, 14. 7073 ? Myrcia fosteri Croat det. R.G.
MADw 32414 (w) Slender shrub 4 m. tall.

US. 7074 ~~Hymenium~~ Coenogonium
Forming "shelves" on tree trunk, 1 m from ground.

MO 7075 moss. Syrrhopodon incompletus Schwaegr.
Dense cover on large palm from base to ~~foot~~ crown. var. incompletus

Sept. 21, 1973

Canal Zone, Panamá
ca. 17 PPA 398/109

MO, MAD, 15. 7076 Rub. Faramea occidentalis (L.) Rich. det. J. Dwyer 1974
MADw 32415 @ shrub 5 m. tall. Fruit light green.

MO, MAD, 9. 7077 Cupania scrobiculata L.C. Rich. det. T. Croat 1974
MADw 32416 @ small tree 12 m. tall with shallowly fluted trunk. Aril light orange, seed shiny black.

7078 - 7081 5 m. from ground on # 7077.

US, , . 7078 lichen
US, , , . 7079 lichen
US. 7080 lichen
US, . 7081 lichen.

MO, MAD, 7. 7082 Rub. Psychotria marginata Sw. det. J. Dwyer 1974
MADw 32417 @ slender shrub 2 m. tall. Fruit turning from green to orange to red to purple and juicy.

MO, 10. 7083 Paullinia rugosa Benth. ex Radlk. ! T. Croat 1974
Coarse vine with milky sap at edge of forest. Fruit bright red.

MO, . 7084 ~~Menispern~~ Cissampelos tropaeolifolia DC.
Vine in roadside thicket.

MO. 7085 Bignon. Anemopaegma orbiculatum (Jacq.) DC.
Vine at edge of forest. Corolla tube pale yellow, lobes white, odorless. Only one inflorescence seen. det. Al Gentry 1973

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Prov. Colón, Panamá

17PPA 446/501

det. D'Arcy XII. 1973

MO, , , , 7086 Solanum lanceifolium Jacq. or S. siparunoides Ewan.
, , .
Trailing vine, roadside at Portobelo-Puerto Pilón road at bridge over Río Guanche. Corolla lobes white, the purple hairs on the outside making them appear purple. alt. 5 m.

17PPA 448-452/504-7

~~7087-7088 Dense brushy~~

7087-7108 N side of Río Guanche, ½ km. upstream from Puerto Pilon-Portobelo Hwy. bridge. alt. 5-30 m. tropical wet forest, disturbed.
7087-7088, 7090 Dense brushy area grown up after clearing forest.

MO, MAD, 14. 7087 Phyllanthus acuminatus Vahl R.L. 1976
MADw 32418 (w) Common, to 8 m. tall, sap not milky. Leaves arranged in large bipinnate branchlets falling entire and leaving "leaf" scars, acting ~~much~~ much like some ~~legume~~ legume leaves.

MO, MAD, 8. 7088 Rub. Gonzalagunia rosea S. det J. Dwyer 1974.
MADw 32419 (w) Slender shrub 3 m. tall. Corolla white, erect. Fruit dark purple with white tip.

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Prov. Colón, Panama
17PPA 448-452/ 504-7

MO, MAD, 6. 7090 malv. Hibiscus spathulatus Garke det. R. Liesner 1974
MADw 32420 ⓦ Slender shrub 3 m. tall. Petals pink.

7089-7108 Wet forest on slope above Río Guanche.

MO, 10. 7089 Anthurium triangulum Engl.
Terrestrial. Spathe first bright yellow, then green, then purple. Spathe pale green. With upright caudex ca. 15 cm. tall from creeping base. det. T. Croat, 1975

MO, , , 7091 Renealmia exaltata L.f. = R. alpinia (Rottb.) Maas det. P. Maas 1978
, . Herb to 3 m. tall. Inflorescences from base.

MO, MAD, , , . 7092 Acanth. Aphelandra micans Moritz det. T. Croat 1974
MADw 32421 ⓦ To 1 m. tall, single stemmed. Whole inflorescence bright orange red.

[7093 Aroid . . .
Later decided this the same species as 7089 and all put under that number].

MO, MAD, 11. 7094 Warscewiczia coccinea (Vahl) Klotsch. ! J. Dwyer 1974
MADw 32422 ⓦ Shrub 5 m. tall. Bracts bright red.

MO, 5. 7095 Polypod. Pleopeltis percussa (Cav.) Hook. & Grev.
Epiphyte on woody vine. D.L. 1977

MO, , . 7096 Carludovica drudei Mast.
Acaulescent, leaves to 2 m, pleasantly aromatic. Cut parts exuding a clear

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Prov. Colón, Panamá
17PPA 448-452/504-7

sticky gelatinous sap. Inflorescence peeling back revealing the orange pulpy inside. det. R. Eriksson, 1986

MO, MAD, 17. 7097 Siparuna pauciflora (Beurl.) A.DC.
MADw 32423 (w) Shrub 6 m. tall. Crushed leaves with slight unpleasant odor but causing a sharp reaction in the nasal passages. The fruit easily detached, growing on branches to 5 cm. diam., very pale green, to about 2.2 cm. diam., globose with a conical depression at summit, when ripe splitting irregularly, the lobes spreading to reveal the white insides and white seeds with red aril.

MO. 7098 Acanth. Nautilocalyx colombianus (Wiehl)
Terrestrial. Corolla white.
det. D.T. Skog 1978

MO, MAD, 32. 7099 Guatteria amplifolia Tr. & Pl.
MADw 32424 (w) Slender tree 8 m. tall. Berries green, stalks purple. (shrub)

MO, . 7100 Selaginella anceps Presl D.G. 1977
Stems very brittle.

MO, . 7101 Aroid.
Vine climbing into tree, 3 m. from ground. Inflorescence light green.

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Prov. Colón, Panamá — det. H. Kennedy, 1975

17PPA 448-452/504-7 — Calathea inocephala (Kuntze) Kennedy & Nicholson

MO. 7102 — Calathea altissima (Poepp. & Endl.) Koern.
Acaulescent herb 1.5 m. tall. Fruit bright orange, seeds bright blue.

MO, 5. 7103 — Renealmia cernua (Sw.) Macbr. ex L.
! P. Maas 198
Stems arching; inflorescence erect, orange.

MO, MAD, 8. 7104 — Rub. Psychotria micrantha H.+B. det. J. Dwyer 1974
MADw 32425 — (w) Slender shrub 4 m. tall. Fruit green.

MO, , , . 7105 — Olacaceae Heisteria longipes Standl. det. J. Humbles 1974
Shrublet 1 m. tall. Fruit green, turning black. "Calyx" red. H. ~~costaricensis~~

MO, . 7106 — Fern. Cyathea petiolata (Hook.) Tryon
D.L. 1977

MO, 4. 7107 — Marant. Calathea marantifolia Standl.
Flowers yellow. Common. det. H. Kennedy, 1975

MO, 12. 7108 — Cucurb. Elateriopsis oerstedii (Cogn.) P.H. det. R. Liesner 1974
Vine to at least 8 m. draped over trees at edge of forest. Stems 5-angled. ♂ flowers green. The fruit asymmetric, ca. 4.5 × 8 cm., oriented erect, green at tip, becoming white at base, impossible to press when ripe because explosively dehiscent revealing the juicy white insides, the seeds hard and brown.

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life size sketches of 7108

It was now getting dark and after ~~days~~ driving home for supper and working in the herbarium pressing until 3:00 A.M., I discovered that I had left a field press with #'s 7087, 7088, 7090, the wood for 7087 and a plastic bag with # 7091 at the edge of the forest and this necessitated ~~an~~ a return on Sept 25, 1973 q.v.

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Sept. 23, 1973

Canal Zone, Panamá
17PPA 485-490/020-024
MO, , , . 7109 Ficus citrifolia Mill. det. CC Berg 1976
Spreading tree 6 m. tall, cultivated at Summit Gardens. Branched from base and beginning to send down aerial roots.
Figs light green with paler spots, ca. 1cm. diam.

Sept. 24, 1973

Canal Zone, Panamá
17PPA 422/088

7110-7115 Near summit of Cerro Pelado. Secondary tropical moist forest. 1 Km. N of Bamboa. alt. 200 m.

MO, MAD, 22. 7110 Rub. Amaioua corymbosa HBK. J. Dwyer 1974
MADw 32426 (w) Single stemmed shrub 10 m. tall. Fruits reddish with yellow tip.

7111-7112 3 m. from ground on # 7110.

US, . 7111 lichen
US, . 7112 lichen

MO, MAD, 11. 7113 Warscewiczia coccinea (Vahl) Klotzsch ! Dwyer 1974
MADw 32427 (w) Shrub 6 m. tall. Bracts bright red, corolla and anthers orange. Occasional but conspicuous along road to radar station.

MO. 7114 Voyria tenella (Hook.) Mig. ! T.S. Elias 1973
Stem white, corolla lobes blue, throat yellow. "Roots" usually loose in rotting leaf layer, occasionally into clay soil below.

MO, MAD, 6. 7115 ! Trichilia cipo (A. Juss.) C.DC. det. T. Croat 1974
MADw 32428 (w) Shrub 6 m. tall. Fruit yellow, splitting to reveal the bright red aril around the seed.
Trichilia tuberculata (Tr. & Pl.) C.DC.
Fl. Neotr. 28: 438.

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Prov. Colón, Panamá
17 PPA 448-455/502-6

7116-7150 Along Río Guanche, 0.5-1 km. upstream from Puerto Pilón - Portobelo road. alt. 5-30 m. 6 km. S of Portobelo.
7116-7126 Disturbed tropical wet forest on slope on N side of river.

MO. 7116 Lycopodium dichotomum Jacq. det. D.L. 1977
Epiphyte fallen from trees.

MO, 7. 7117 Lygodium radiatum Prantl D.L. 1977
Slender vine to at least 8 m. into trees.

MO, 8. 7118 Fern Dennstaedtia cicutaria (Sw.) Moore D.L. 1977
Leaves to 2.5 m. tall from long shallow underground rhizomes.

MO, MAD, 3. 7119 Comp. Neurolaena lobata (L.) R.Br. R.L. 1976
MADw 32429 (w) Straight stemmed shrub 3 m. tall.
Disk yellow, flowers odorless.

MO, 6. 7120 Piper pseudo-fuligineum C.DC. det. J. Conrad 1974
Shrub 1.5 m. tall. Spikes erect.

MO, MAD, 5. 7121 Siparuna nicaraguensis Hemsl. det. Humbles
MADw 32430 (w) Slender shrub 2 m. tall, 2.5 cm. diam.
S. rosicosta T. Antonio sp. nov. det. T. Antonio 1983
Inflorescences almost to base. Foliage with ~~lemon~~ lemon-like aroma.

MO. 7122 Heliconia imbricata (O. Ktze.) Baker. ! T. Croat 1973
Rare (?). Herb 3 m. tall. Bracts red with yellow green line on center. Inflorescence erect. Fruit turning bright shiny blue.

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17 PPA 448-455/502-6

det. T. Croat 1975

MO, , . 7123 Aroid. Rhodospatha moritzianus (Schott) Croat.
Terrestrial, on caudex to 0.5 m. tall, petioles about 45 cm. long. cross section of petiole ♡. Spathe soon rotting, spadix pink.

MO, 5. 7124 Piper augustum Rudge det. J. Conrad 1974
Bent over shrub 2 m. high, aromatic. Spikes hanging.

MO, . 7125 Fern. Dicranoglossa panamense (C. Chr.) Gómez
Epiphyte 3 m. from ground on small branches of a shrub. D.L. 1977.

MO, 8. 7126 Sapind. Paullinia verecunda Standl. det. T. Croat 1974
Slender vine to 3 m. Fruits light green, then bright red, mostly on the lower leafless part of the stem.

MO, 21 7127 Ficus insipida Willd.
Large wide spreading tree 15 m. tall, common along edge of Río Guanche. Copious milky sap from twigs. Figs ripe and constantly falling, to 6.5 cm. diam, green with light green maculations, the white flesh 0.8 cm. thick, the insides loosely filled with flowers and fruits, pink when young, many filled with wasps. The figs said to be eaten; the flesh is insipid, tasting something like raw Cucumis sativa.

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Prov. Colón, Panamá
17PPA 448-455 / 502-6

7128-7144 (except 7133 + 7135 + 7136 as noted) Sand and gravel bars along Río Guanche.

MO, 11. 7128 Urtic. Phenax sonneratii (Poir.) Weddell det. R. Liesner 1974
1 m. tall herb.

MO, 7. 7129 Scoparia dulcis L.

MO, 9. 7130 Alternanthera sessilis (L.) R. Br. det. R. Liesner 1974

MO, 10. 7131 Cyperus luzulae (L.) Retz.

MO, 5. 7132 Eleocharis elegans (HBK.) Roem. & Schult.
det. G. Davidse, 197-

MO, 10. 7133 Marathrum
Tightly affixed to stones and gravel of Río Guanche in swift flowing clear water less than 40 cm. deep. Often abundant.

MO, 3. 7134 ? Clusia uvitana Pittier det. B. Hammel, 1984
Apparently a bushy epiphyte fallen from a tree. Buds green and white. Sap sticky. C. minor L. det. D'Arcy, 1980.

MO, MAD, 9. 7135 ? Malv. Sida rhombifolia L. det. R. Liesner 1974
MADw 32431 (w) 1 m. tall patch.

MO, 7. 7136 Cupania latifolia HBK. det. T. Croat 1974
Large shrub 6 m. tall at edge of forest slope along Río Guanche. Fruit greenish tan, aril orange, seed shiny black.

MO, MAD, 20. 7137 Solanum intermedium Sendtn. det. D'Arcy XII. 1973
MADw 32432 (w) Forming many stemmed clumps to 2 m. tall, common in places. Corolla white.

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MO, MAD, 8. 7138 Lamiaceae. Hyptis obtusiflora Presl det. R. Liesner 1974
MADw 32433 @ Shrubby, 1 m. tall.

MO, 5. 7139 Clibadium asperum (Aubl.) DC. R.L. 1976
Shrubs to 3 m. tall. Flowers white, anthers black. Bracts becoming juicy and dark green in fruit. Stem light green, mottled with purple.

MO, . 7140 Gram. Paspalum paniculatum L. det. G. Davidse 1974

MO, 5. 7141 Comp. Porophyllum ruderale (Jacq) Cass. ssp. ruderale
Leaves with faint unpleasant smell. R.L. 1976

MO, 10. 7142 Cyperus ligularis L.
Clump. det. G. Davidse, 1975

MO, 10. 7143 Gram. Homolepis aturensis (HBK.) Stapf. Chase. !G. Davidse 1974
Forming a solid low stand with extensively creeping stems.

MO, 16. 7144 Gram. Ichnanthus pallens (Sw.) Munro det. G. Davidse 1974
Forming dense low stand in shady place.

7145-7148 Disturbed tropical wet forest on slope on N side of Río Guanche.

MO, . 7145 Brownea
Shrub 7 m. tall, 15 cm. diam. Only one inflorescence seen. Flowers brilliant orange red, odorless.

MO, MAD, 4. 7146 Myriocarpa yzabalensis (Donn.-Sm.) Killip
MADw 32434 @ Large arching shrub 3 m. tall.
det. R. Liesner 1974

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MO, , , 7147 Marant? Calathea aff. nodosa Rusby. det. H. Kennedy 1975
, . Herb 4 m. tall. Flowers yellow, the large petal white at tip.

MO, MAD, , , 7148 Urera baccifera (L.) Gaud. det. R. Liesner 1974
, . MADw 32435 @ 3 m. tall rank stinging shrub with soft wood with concentric rings, much shrinking on drying. Inflorescence purple, berries first green, then white and juicy, seed brown.

Now come some miscellaneous things I forgot to number at the time.

7149-7150 On trunk of #7087 (coll. Sept. 22, 1973), 4 m. from the ground.

US, , . 7149 Graphid.
US. 7150 lichen.

7151-7152 On tree trunk in disturbed tropical wet forest on N slope along Río Guancho.

MO 7151 moss
MO. 7152 Hymenophyll. Trichomanes curtii Rosenst. det. D.L. 1977.

MO, , . 7153 Aroid. Philodendron grandipes Krause
Same area as 7123. Terrestrial. Spathe green, petioles pink at base. det. T. Croat, 1975
Cross section of petiole: or

Sept. 25, 1973

Prov. Colón, Panamá
17PPA 448-455/502-6

I think this is a place well worth collecting despite its closeness to Portobelo. There is some clearing near the road, but a short walk upstream apparently brings you to "virgin" forest. The river, as far as I went was beautifully clear with a solid gravel bottom easily waded, being no deeper than my knees if I was moderately careful; I wouldn't like to get caught in a flood. The road crew was digging gravel out of the river bed but I didn't go on to Portobelo to see where they were using it.

I found my field-press and plastic bag just where I'd left them. Surprisingly everything was in good condition, probably because of the cool weather and concealment in shade of the forest. The exception was the sheets of Phyllanthus # 7087, all the leaves had fallen from the twigs and I was sorry to have to discard my numerous duplicates of finely pressed "compound leaves." This necessitated going back to the place where I got it and collecting new material off another sprout off the sprout from which I got the wood specimen. It isn't kosher to leave the date Sept. 22 when it was actually collected on Sept. 25, but I don't think the 3 days are critical enough to go about further complicating these notes.

I have been casting covetous eyes at the Cespedezia macrophylla in bloom in the forest along the slope. They are just a little too big for me to tackle with my saw without ~~a goo~~ an overpowering reason and the fact that they'd likely fall into the river in an inaccessable place convinced me the danger wasn't quite worth it.

 Sept. 27, 1973

Canal Zone, Panamá
17PPV 475/940-42

7154 - 7165 Secondary tropical moist forest along road K-10, 4 Km. N of Arraiján. alt. 115 m.

MO, 22. 7154 Chrysophyllum ~~sacia~~ cainito L.
Tree 15 m. tall, sap milky, leaves dark shiny green above, coppery below. Flowers greenish, with sweet odor.

MO, MAD, 13. 7155 Lindackeria laurina ~~Oerst~~ Hemsl.
MADw 32436 (w) Small tree 10 m. tall. Flowers white, fragrant.

MO, 9. 7156 Scleria secans (L.) Urb.
Climbing to 2.5 m. det. G. Davidse, 1975

MO 7157 moss
Rotten log.

MO, . 7158 Marant.? Ischnosiphon pruinosus (Regel) Petersen
Herb. 2 m. tall, leaves asymmetric, with purple margin on one edge beneath. Flowers purple and yellow. det. H. Kennedy, 1975

MO, , , . 7159 Bactris barronis Bailey
MADw 32437 (w) A few seen, ~~not really in colonies~~ not forming large colonies. Stems to 2 m. tall. Leaves about 3.5 m. long, blade ca. 2 m. long, somewhat irregularly pinnate below, regular above except for a gap about 0.5 m. from tip of rachis. Inflorescences from leaf axils, fruit first green then then bright orange, becoming ripe about the time the leaf in which

Sept. 27, 1973

Canal Zone, Panamá
17 PPV 475 1940-42.

they are born is ready to die.

MO, , , . 7160 Heliconia catheta R.R. Smith det. T. Croat 1973
Herb 4 m. tall. Inflorescence hanging, bracts red at base, yellow green at tip, flowers yellow, fruit turning from yellow to bright blue.

MO, , , , 7161 Marant. Heliconia hirsuta L.f. det. T. Croat 1973
. Herb 1 m. tall. Bracts greenish yellow, flowers yellow with dark green tips, fruit yellow then bright blue.

MO, 10. 7162 Solanum jamaicense Mill. ! D'Arcy XII. 1973
Shrub 2 m. tall. Corolla white, berries turning orange.

7163-7165 Roadside.

MO, MAD, 7. 7163 Lantana moritzjana Otto & Dietr.
MADw 32438 ⓦ Spreading shrub 1.5 m. tall, flowers yellow and orange. det. R. Liesner, 1974

MO, 6. 7164 Gram. Saccharum spontaneum L. det. G. Davidse 1974
To 4 m. tall, forming dense stands.

MO, MAD, . 7165 Cassia maxonii (Br. + Rose) Schery det. R. Liesner 1973
MADw 32439 ⓦ Slender shrub 2 m. tall. Flowers dull yellow. (yellow 2.5/9).
Senna hayesiana (R + R.) I. & B.
det. G. Davidse, 197.

Sept. 27, 1973

Canal Zone, Panamá
17 PPV 485/899

7166-7167 Along Pan Am Highway ½ km. E of Canal Zone ~~bor~~ border at Arraiján. alt. 110 m.

MO, MAD, 19. 7166 Crotalaria vitellina Ker. det. R. Liesner 1973
MADw 32440 @ Shrub 2 m. tall on grassy roadside. Pods and stem tinged with purple. Flowers yellow.

MO, MAD, 20. 7167 Vochysia ferruginea Mart.
MADw 32441 @ Small tree 10 m. tall. A number of others (some at least twice as large) seen in ~~con~~ vicinity and very conspicuous because of the ~~a~~ abundant yellow flowers. Cut stem exuding a clear gelatinous substance. Tree infested by ± innocuous ants. Flowers pleasantly and sweetly fragrant.

US, , , . 7168 lichen
on Vochysia ferruginea #7167, 1 m. from ground.

The first time I stopped I found the trees too large to cut down (i.e. > 1 ft. dbh) but this one was about right; it leaned slightly and the wood is soft unlike the Lindackeria laurina #7155 which was quite a chore. I was pretty sure that somebody would have stopped and collected these easily accessable and very conspicuous trees and sure enough there are quite a few collections from the vicinity of Arraiján.

Sept. 27, 1973

Canal Zone, Panamá
17PPV 580/900
US, , , . 7169 lichen
on rocks at base of Sosa Hill (on NW side), Balboa.
alt. 10 m.
I also made a collection of this
apparently volcanic rock, which in fact was the reason I stopped.

Sept. 29, 1973

Canal Zone, Panamá
17PPA 523/ 171
MO, MAD, WIS, 7170 *Cleome pilosa* Benth. det. H.H. Iltis, Oct. 1974
[redacted], . MADw 32442 ⓦ Woody herb to 2-m. tall at edge of roadside thicket along Madden Hwy at turnoff to Boy Scout camp. Petals erect, off white with very pale purple tinge. Fruit hanging. 1 Km. SE of Madden Dam. alt. 90 m.

The jeep would just barely start but I took off for the Río Guanche anyway. While crossing the one-lane temporary bridge over the Río Viejo, the jeep stalled and I had to be pushed by a bus. It wouldn't start, so I collected enough to fill two field presses which in an emergency I could carry to Gamboa on a bus. By this time the jeep started, so after turning it around, I got out and filled about 8 big plastic bags with stuff to press later at Gamboa. Thus a collection from the Río Viejo instead of the Río Guanche.

Sept. 29, 1973

Prov. Colón, Panamá
17PPA 339-343/383-8

7171-7204 Thickets and pasture along Río Viejo, between the Portobelo road and Quebrada Ruiz, 4 Km. NE of Puerto Pilón. alt. 5 m.

MO, , , . 7171 Borag. Tournefortia maculata Jacq. vel sp. aff. Large vine in trees. det. R.L. 1976.

MO, . 7172 Aroid. Anthurium friedrichsthalii Schott det. T. Croat. 1975
Epiphyte. Mature spadix hanging, red between the flowers, the fruit yellow, exsert.

MO, MAD, , , 7173 ~~Pithecolobium~~ Calliandra glaberrima (Benth.) Britt. & Killip.
, . MADw 32443 (w) Low shrub arching over river.

MO. 7174 Orchid. Catasetum viridiflavum ~~Hook.~~ det. R. Liesner 1974 det. H. Hill, 1987
1.5 m. from ground on shrub along river. Flowers odorless, greenish yellow.

MO, 6. 7175 Croton billbergianus Muell.-Arg. ! R. Liesner 1974
Shrub 5 m. tall. Common.

MO, 5. 7176 Cupania latifolia HBK. det. T. Croat 1974
Small tree 10 m. tall, 15 cm. dbh. Fruit greenish tan, seeds shiny black, aril orange.

MO, MAD, , , , 7177 ~~Solanum~~ Lycianthes synanthera (Sendtn.) Bitt. det. D'Arcy XII. 1973
, . MADw 32444 (w) Shrublet ~~[illegible]~~ to 0.75 m. tall. Corolla pale purple, fruit green then bright orange.

MO, 6. 7178 Sapot. Chrysophyllum panamense Pittier.
Small tree 10 m. tall with milky sap. Corolla yellowish green, lightly fragrant.
det. G. Pilz, 1975

Sept. 29, 1973

Prov. Colón, Panamá
17PPA 339-43/383-8

MO, MAD, 10. 7179 Randia ~~armata (Sw.) DC.~~ formosa det. J. Dwyer 1974
MADw 32445 @ Shrub 7 m. tall with hard wood. Fruit green, becoming partly yellow. Seeds becoming black and surrounded by black pulp. Wood darkening on drying.

MO, , , , 7180 Aroid. Spathiphyllum friedrichsthalii Schott
Forming stands in ± open spots in pasture. Spathe and spadix white or green. det. T. Croat, 1975

MO, 6. 7181 Aroid. Monstera
Very common vine on tree trunks.

MO, . 7182 Tillandsia bulbosa Hook. det. J. Utley 1977
Attached to trunk of large tree. Plant bright green.

MO, 14. 7183 Piper reticulatum L. det. J. Conrad 1974
Shrub 5 m. tall. Spikes erect, white, then green.

MO, 5. 7184 Cestrum reflexum Sendtn. det. D'Arcy XII. 1973
Viny shrub 3 m. tall. Fruit green.

MO, , , . 7185 Fern. Niphidium crassifolium (L.) Lell.
Epiphyte. det. D.L. 1977

MO, 15. 7186 Selaginella exaltata (Kunze) Spring det. D.L. 1977
Forming stand 1 m. tall (clambering to 1.5 m.) in ungraged thicket. Stem held off ground by long stilt roots arising mostly on the lower part of the stem.

Sept. 29, 1973

Prov. Colón, Panamá
17 PPA 339-43/383-8

MO, . 7187 Aroid. Monstera dubia (HBK.) Engl. & Kr.
Large tough stemmed vine climbing up trunk to at least 10 m. Surface layer of spadix easily detached. The only other inflorescence seen was also seen growing near apex of a leafless stem. det. T. Croat, 1975

MO, 7. 7188 Piper pseudo-fuligineum C.DC. det. J. Conrad 1974
Shrub 2 m. tall. Spikes erect.

MO, 7. 7189 Panicum milleflorum Hitchc. & Chase det. G. Davidse 1974
Forming stand in low spot in open pasture.

MO, . 7190 Bromel. Vriesea sanguinolenta Cogn. & March.
Huge tank epiphyte 2 m. from ground. 1.85 m. from base to tip of inflorescence. Leaves to ca. 1.1 m. long. det. J. Utley, 1977

MO, 9. 7191 Dimerocostus strobilaceus O. Ktze. ssp. strobilaceus det. P. Maas 1979
Colonies of unbranched slender stems to 4 m. tall, leafy only at tips. Petal white with salmon yellow throat, to 11.5 cm. broad. Fruit turning orange.

MO, , , . 7192 Renealmia alpinia (Rottb.) Maas det. P. Maas 1978
Herb to 4 m. tall, the stem consisting mostly of the very long sheathing leaf bases which do not completely encircle the stem. Inflorescence from base of stem. Fruit reddish, turning very dark purple. Seeds black, pulp orange and stringy.

1112 Sept. 29, 1973

Prov. Colón, Panamá
17PPA 339-43/383-8

MO, , , . 7193 Costus villosissimus Jacq. det. R. Maas 1979
Herb 2 m. tall. Bracts becoming red at base.

MO, , , . 7194 Calathea insignis Petersen
Herb to 3 m. tall. Bracts green, yellow on margin. det. H. Kennedy, 1975

MO, , , . 7195 Carludovica drudei Mast. det. R. Eriksson, 1976
Herb 2.5 m. tall. Cut leaf bases exuding clear sticky gelatinous sap. Leaves odorless. Inflorescence 4.5 cm. diam, orange within, no ripe ones seen.

MO. 7196 Bromel. Guzmania monostachia (L.) Mez det. Utley, 1985
Epiphyte in plantation (?) of Psidium guajaba.

MO, , . 7197 Rub. Sickingia maxoni St. det. J. Dwyer 1974
Large shrub 8 m. tall. Cut stems turning pink.

MO, , . 7198 Malpighia rameroana Cuatrec. det. F. Meyer, 1994
Slender shrublet 1 m. tall. Petals white or tinged with pink. Fruit bright red.

MO, , , , . 7199 Marant? Calathea marantifolia Standl.
Herb 1.5 m. tall. Bracts yellowgreen, flowers dull yellow. det. H. Kennedy, 1975

MO, 8. 7200 Piper marginatum Jacq. det. J. Conrad 1974
Shrub 2 m. tall. Spikes arching. Leaves with strong spicy fragrance.

US, . 7201 Graphid.
1.5 m. from ground on shrub.

Sept. 29, 1973

Prov. Colón, Panamá

17PPA 339-43/383-8

MO, . 7202 Aroid. Xanthosoma nigrum (Vell.) Stellf. det. Croat, 1981
Terrestrial herb 1.5 m. tall along open roadside at bridge, possibly planted. Upper surface of leaf not wetting, the water forming beads.

MO, , , . 7203 Hedychium coronarium Koenig ! P. Maas 1978
Overgrown roadside. Flowers with very strong heavy sweet odor. Common in ~~[illegible]~~ ~~Asclep~~ places along low open roadside from here to Puerto Pilón.

MO, , , . 7204 Asclep. Blepharodon mucronatum (Schlecht.) Decne. det. D. Spellman 1974.
Herbaceous vine, sap milky, flowers green.

Oct. 1, 1973

Canal Zone, Panamá
17PPA 365/083-5

7205-7215 Along RR and Panama Canal, 6 Km. W of Gamboa. alt. 30-40 m.

7205-7209 Brushy secondary tropical moist forest.

MO, 5. 7205 Gesner. Drymonia serrulata (Jacq.) Mart ex DC.
Vine to at least 2 m. Bracts and fruit green.

MO, MAD, , , 7206 Pentagonia ~~pubescens Standl.~~ macrophylla Benth. Det. J. Dwyer 1974
, . MADw 32446 (w) Shrub 4 m. tall. Calyx red.

MO, 5. 7207 Rub. Psychotria horizontalis Sw. " "
Slender shrub 2 m. tall. Fruit yellowish green, turning deep red.

MO, MAD, 10. 7208 Rub. Alibertia edulis (Rich.) Rich. " "
MADw 32447 (w) Slender shrub 3 m. tall. Fruit pale green.

MO, 7. 7209 Cupania costaricencis Radlk. det. T. Croat 1974
Small tree leaning over pond. Aril orange, seed black.

MO, 10. 7210 Ceratophyllum demersum L. det. R.L. 1977
Common aquatic in small pond.

7211-7212 Open gravel along RR.

MO, 8. 7211 Cyperac. Fimbristylis spathacea Roth
Clumps. det. G. Davidse, 197.

MO, 8. 7212 Rhynchelytrum repens (Willd.) C.E. Hubb. det. G. Davidse 1974
Clump. Inflorescence reddish. Rare, none

Oct. 1, 1973

Canal Zone, Panama
17PPA 365/083-5

other noticed between here and Bamboa.

MO, , , . 7213 Heliconia mariae Hook. f. ! T. Croat 1973
Huge herbs 6 m. tall in dense colony between RR and pond. Leaf blade to 2 m. long. Inflorescence pendant, bracts red, becoming ~~[illegible]~~ green with age due to growth of algae, flowers red, fruit blue.

MO, 6. 7214 Phragmites australis (Cav.) Trin. ex Steud. det. G. Davidse 1974
Large clump in 10 cm. of water, rooted in gravel, ~~[illegible]~~ along shore of Panama Canal.

MO, 10. 7215 Heteranthera reniformis R & P. ! R. L. 1977
Filling small ~~[illegible]~~ ditch along RR with shallow running water.

This is a hell of a long ways to walk to get species which grow in Wisconsin.

Oct. 2, 1973

Canal Zone, Panamá
17PPA488-90/024

7216-7219 Cult. in Summit Gardens. alt. 90 m.

MO, 6. 7216 Lecythis minor Jacq. det. S. Mori 1974
Small tree 8 m. tall, main trunk 15 cm. dbh. Bark rough, that on younger stems hard and deeply fissured. Flowers from ground. Petals white with tinge of green in middle.

MO, 4. 7217 Burser.
Tree 50 cm. dbh, 12 m. tall. Fruit green.

MO, , . 7218 Burser.
Tree 10 m. tall, 30 cm. dbh with small buttresses. Ripe fruit very dark purple or black, ca. 7.5 x 3.5 cm.

MO, , , . 7219 Burser.
Buttressed tree 12 m. tall, 40 cm. dbh. Flowers pale yellowish green.

Oct. 3, 1973

Canal Zone, Panamá

17PPA 393/114

On my way to Gamboa the jeep broke down and I was "fixing" it, Dean Neptune ~~was~~ from the Tropical Test Center went by on the way to a study area on the Pipeline Road. He stopped, tried to help, but it wouldn't start, so I went out along Pipeline Road with him and left the jeep along Gaillard Hwy.

7220-7221 Along Río Frijolito at Pipeline Road bridge. 4½ km. NW of Gamboa. alt. 40 m.

MO. 7220 Aroid. Anthurium friedrichsthalii Schott
4 m. from ground on shrub, tropical moist forest. Spadix hanging, axis bright orange, seeds yellow orange. det. T. Croat, 1975

US, , , , . 7221 Octoblepharum albidum Hedw.
On the wooden bridge.

17PPA 395-~~0~~400/106-111

7222-7225 Secondary tropical moist forest along Pipeline Road 4 km. NW of Gamboa. alt. 50 m.

MO, , , , , , , . 7222 Cestrum latifolium Lam. det. D'Arcy XII.1973.
Shrub 2.5 m. tall. Flowers yellowish green, berries turning ~~pur~~ purple.

MO. 7223 Ouratea lucens (HBK) Engler det. R. Liesner 1974
Slender shrub 1 m. tall. Petals yellow.

118 Oct. 3, 1973

Canal Zone, Panama

17PPA 395-400/106-111

MO, , , . 7224 Solanum arboreum ~~Scandn.~~ Dun. det. D'Arcy XII.1973
Slender shrubs to ca. 1 m. tall. Fruit green.

MO, , , , 7225 Rub. Guettarda maddenensis Dwyer det. J.D. 1974
Spreading shrub 4 m. tall. Fruit green, turning red.

The TTS was going to bulldoze a short entrance road and then use this area to test ~~heavy~~ trucks to find out what size of trees could be overrun. I made plans to come out when the bulldozer was at work to collect bryophytes and lichens and trees which are otherwise out of reach.

17PPA 488/024

7226-7227 Cult. in Summit Garden. alt. 90 m.

MO, 13. 7226 Lecythis minor Jacq. det. Scott Mori 1974
Small spreading tree 10 m tall, 30 cm. dbh. Bark deeply fissured. Only a few old empty fruits. Only a few young fruits seen, corky brown except for calyx lobes and ring around the stigma. Flowers collected from ground. Petals white, generally ~~with~~ tinged with green on the outside where they were exposed in the bud stage. Stamens and staminodes yellow.

Oct. 3, 1973

Canal Zone, Panama
17 PPA 485/022

det. A.G. 1973

MO, , , . 7227 Bignon. Saritaea magnifica (Sprague ex Van Steenis) Dugand
Vine to 5 m. completely covering a trellis.
Corolla lobes and guides in throat purple,
throat white. Labelled "Bignonia
magnifica... magenta... Colombia"
Hummingbirds were probing into the
calyx from the outside.

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Oct. 4, 1973

Canal Zone, Panamá
17PPA 485/023

MO, 4.

7228 Ficus coronaria King ?
Tree 12 m. tall with ~~the~~ three 40 cm. dbh. trunks. Cult. in Summit Gardens. Without aerial roots. Fruit green with lighter green spots and red stripes, to 2.5 cm. diam., born on short leafless branches ca. 30 cm. long, often in dense ~~clum~~ clumps, ~~& on the trunk and large bran~~ on larger branches and on the trunks nearly to the ground.

Oct. 5, 1973

Canal Zone, Panamá
17PPA 397/085

7229-7237 3 Km. W of Gamboa along the RR.
Alt. 30 m.

MO, 14. 7229 ?Gynerium sagittatum (Aubl.) Beauv. det. G.D. 1974
Huge grass in patch, to 7 m. tall, inflorescence to ca. 1.3 m. long. This was the only patch of this species seen along the RR for the first 6 Km. W of Gamboa.

7230-7235 Brushy second growth ~~woods~~.
tropical moist forest.

MO, . 7230 fern. Tectaria incisa Cav. f. incisa D.L. 1977
MO, 9. 7231 fern. Adiantum lucidum (Cav.) Sw. D.L. 1977.
MO, 9. 7232 Selaginella horizontalis (Preol) Spring det. Lellinger, 1983
MO, 6. 7233 fern. Thelypteris serrata (Cav.) Alston D.L. 1977
at edge of pond. Fronds to 3 m. tall.
7234 ?Hymenium
0-1 m. from ground on trunk of shrub.
MO, , , , . 7235 Marant. Calathea latifolia (Link) Klotzsch
Grassy opening. Herb 2 m. tall. Flowers purple and white. det. H. Kennedy, 1975

MO, 7. 7236 Gram. Saccharum spontaneum L. det. G.D. 1974
To 4 m. tall. Forming occasional colonies ~~on open gr~~ ~~along the RR~~ for the first 6 Km. W of Gamboa in open grassy area along RR ~~composed~~ dominated by Panicum maximum.

Oct. 5, 1973

Canal Zone, Panamá
17PPA 397/085

MO, 13 7237 Comp. Baltimora recta L. R. L. 1976
to 2 m. tall. Flowers yellow, stem green, mottled with purple. Common in open grassy area dominated by Panicum maximum along RR.

17PPA 405/083 det. G. D. 1974
MO, 14. 7238 Paspalum fasciculatum Willd. ex Fluegge
Open grassy area at ~~[illegible]~~ airport, 2 km. W of Gamboa. alt. 30 m.

N.B. — km. upstream. is from topo map, not following bends of river.

Oct. 6, 1973

N.B. The numbers crossed out in pencil were in the bags washed into the Caribbean in a flash flood, hence no herbarium listed. The ones with an * were later collected on Dec. 10, 1973 and are under either Gentry & Nee or Nee & Gentry numbers.

Prov. Colón, Panamá

17 PPA 457-463/505-510

7239-7282 Along Río Guanche, 6 km. S of Portobelo. alt. ~~[illegible]~~ 0-10 m.

7239-7247 Remnants of tropical wet forest along river bank. ~~[illegible]~~ 1-2 km. upstream from bridge.

MO, 5. 7239 ~~[illegible]~~ Urera eggersii Hieron (incl. U. elata auct. c. Am.)
Vine to at least 4 m. Veins of leaf reddish on underside. Fruit pale orange, to 3 mm. diam.
det. R. Liesner, ~~[illegible]~~ 1983

* 7240 Tetragonia
Shrub 5 m. tall. Fruit green to dull orange-brown.

* 7241 Anacard?
Shrub 8 m. tall.

7242 ~~[illegible]~~
Shrub 3 m. tall.

7243 Aroid.
± epiphyte at base of large tree. Spathe and spadix purple and green.

7244 Bromel.
Epiphyte fallen from large tree. Leaves purple striped.

~~7~~

7245 moss
On branches of shrub leaning over Río Guanche.

Oct. 6, 1973

Prov. Colón, Panamá

17PPA 457-463/505-510

7246 Pithecolobium
Very common shrub leaning over river, to 4-m. tall.

7247 moss.
hanging off # 7246.

17PPA 464-6/507-8

7248-7249 Pasture with many low shrubs and weeds. 2 km. upstream from bridge.

MO, 6. 7248 Witheringia solanacea L'Her. det. D'Arcy XII. 1973
1.5 m. tall. Corolla yellow, berries turning bright orange.

MO, 5. 7249 Pothomorphe peltata (L.) Miq. det. J. Conrad 1974
To 2 m. tall.

17PPA 468-471/508

7250-7255 Tropical wet forest along abandoned mine RR along river. 2½-3 km. upstream from bridge.

7250 Peperomia
Epiphyte on recently fallen tree.

7251 Bromel
Bracts bright red, flowers white. Epiphyte on recently fallen tree.

7252 Polypodium
on recently fallen tree.

MO, . 7253 Palm.

MADw 32448 ⓦ Slender, 6 m. tall. Inflorescence held upright at ca. 45° angle, at about 2 m from the last rotting leaf bases, the stem smooth below. Petiole ca. 1 m. long, blade ca. 2 m. long.

Oct. 6, 1973

Prov. Colón, Panama

17PPA 468-471/508 "not matched at MO" - R. Liesner 1974

MO, . 7254 Melastom. Clidemia
Slender unbranched shrublet 1 m. tall. Leaves purple beneath. Fruit purple-pink.

MO, 6. 7255 Brownea macrophylla Linden ex Mast.
Shrub 5 m. tall along rocky edge of river. Fruit from twigs or 10 cm. diam. trunk. Fruit dehiscing and twisting during drying. det. Velazquez + Agostini, 1984.

17PPA 471/509

7256-7268 Vic. site of new clearing.

3 km. upstream from bridge.

7256-7260 20 m. from ground on recently fallen tree.

MO, 5. 7256 ~~Hymenophyll~~ ? Peltapteris peltata (Sw.) Morton f. peltata det. D.L. 1977

F, 6. 7257 hepat.

MO 7258 moss.

MO, , . 7259 Polypodium maritimum Hieron. D.L. 1977

MO. 7260 (Polypodium) Pleopeltis panamensis (Weath.) Pic. Ser. D.L. 1977

7261-7268 Gravel bar and brushy edge trop. wet forest.

MO, 4. 7261 Cyperac. Rhynchospora polyphylla Vahl

MO, 4. 7262 Acanth. Odontonema cf. strictum (Nees) Kze det. T.C. 1974
Shrub 2 m. tall. Flowers bright red.

MO, 13. 7263 Paspalum nutans Lam + P. decumbens Sw. det. G.D. 1974

MO, 19. 7264 Cyperac. Rhynchospora watsonii (Britton) Davidse
Dense clump. det. W.W. Thomas

Oct. 6, 1973

Prov. Colón, Panamá

17PPA 471/509

MO, , , . 7265 Cuphea epilobifolia Koehne det. R. L. 1974
Ca. 40 cm. tall. Petals purple.

MO, . 7266 (Carludovica) Dicranopygium crinitum Harling
det. B. Hammel, 1985 Common in places on rocky streambank.

F, , , , . 7267 hepat.
damp clay.

MO, MAD, 6. 7268 Erythrina costaricensis M. Micheli det. B.A. Krukoff 1974
MADw 32449 @ Leafless shrub 5 m. tall, flowers bright red and readily falling.

17PPA 467/507

7269 - 7270 Dense growth of secondary tropical wet forest 5 m. tall. 2 km. upstream from bridge.

MO, . 7269 Marant. Calathea gymnocarpa Kennedy, ined.
Herb ca. 1 m. tall. Fruit pale yellow. det. H.K. 1975

MO. 7270 Marant. Calathea allenii Woods. det. H. Kennedy, 1975
Bracts greenish yellow. Seed black with white aril.

17PPA 457/508

7271-7272 Along river. Remnant of tropical wet forest. 2 km. upstream from bridge.

MO, 8. 7271 Markea ulei (Damm.) Hunz. det. D'Arcy XII. 1973
Epiphytic shrub on large Ficus. Ca. 3 m. from ground. Corolla pale greenish yellow. One fruit juicy, white, 1.4 x 0.9 cm. +

MO, 6. 7272 Inga aff. punctata det. R.L. 1974
Tree leaning over river.

This same plant of Markea collected by Al Gentry on Dec. 10, 1973
Still in flower.

Oct. 6, 1973

Prov. Colón, Panamá

17PPA 452/504

MO, , . 7273 Piper auritum HB.K. det. J. Conrad 1974
Shrub 2 m. tall in overgrown pasture. Spicy aromatic. 1 Km. NE of bridge.

17PPA 453/502

7274-7281 Open gravel bar. 1 Km. upstream from bridge.

MO, 5. 7274 Piper aduncum L. det. J.C. 1974
Shrub 2 m. tall. Spikes arching.

MO, 4. 7276 Comp. Wedelia trilobata (L.) Hitchc. ! R.L. 1976
Forming loose mat along river bank.

MO. 7275 Asclepias curassavica L. ! D. Spellman, 1974
Rare, only one seen. Petals red-orange, corona orange.

MO, , , . 7277 Lantana hispida HBK. det. R. Liesner, 1974
Shrub 2 m. tall.

MO, 5. 7278 ~~Andropogon~~ Schizachyrium microstachyum (Desv.) R.I. + A. det. G.D. 1974

MO, , . 7279 ~~Comp.~~ Gram. Saccharum spontaneum L. ! G.D. 1974
Occasional clumps to 3 m. tall.

MO, . 7280 Digitaria Axonopus compressus (Sw.) Beauv. det G.D. 1974

MO, 4. 7281 Paspalum conjugatum Berg

17PPA 451/504

MO, 7. 7282 Pennisetum purpureum Schum. det. G.D. 1974
Common on open gravelly river banks where tropical wet forest has been cleared away for awhile. 1 Km. upstream from bridge.

Oct. 6, 1973

Prov. Colón, Panamá
17PPA 444/502

7283-7288 Open weedy roadside ~~around~~ along Río Guanche at Portobelo-Puerto Pilón road bridge. 6 km. S of Portobelo. alt. 3 m.

MO, , . 7283 Lab.? Hyptis brevipes Poit. det. R. L. 1974
Herb 1.5 m. tall. Flowers white.

MO, 7. 7284 Andropogon bicornis L. det. G. D. 1974

MO, 4. 7285 Cyperac. Fimbristylis spathacea Roth det. G.D. 1975

MO, 3. 7286 Cyperac. Rhynchospora corymbosa (L.) Britt. det. W. Thomas

MO, 7. 7287 Cyperac. Kyllinga pumila Michx. det. G.D.

MO, 4. 7288 Eleocharis elegans (HBK.) Roem. & Schult.
Forming stand in low area. det. G. Davidse, 1975

Oct. ~~5~~ 7, 1973

Canal Zone, Panamá

ca. 17PPA 479/032

7289-7295 Along road to radar station on Semaphor Hill. 1 Km. NW of Summit Garden. alt. ~~[illegible]~~ 100 m. Secondary tropical moist forest.

MO, MAD, 14. 7289 ~~Rub.?~~ Segiphila laeta HBK.

MADw 32450 (w) Shrub 5 m. tall. Flowers yellow. Berries turning orange. det. R. Liesner, 1975.

MO, 5. 7290 Tectaria incisa var. pilosa (Fee) Morton

Roadside bank. D.L. 1977

MO, , . 7291 Monstera

Vine to at least 5 m. hanging off Gustavia superba. Largest spadix 13 x 2.5 cm.

MO, , , . 7292 Aroid Xanthosma pilosum (Koch & Augustin)

det. T. Croat, 1975 Terrestrial, soft fuzzy, with milky sap, corm light orange within. Spathe green outside, green within except for constricted area which is purple. Fruit and seeds white.

MO, 12. 7293 Fern. Thelypteris hispidula (Pene.) Reed var. hispidula D.L. 1977

MO, 7. 7294 Trichilia montana HBK. det. T.C. 1974

Small tree 8 m. tall. Fruit green, splitting during drying. T. pallida Sw. det. T.D. Pennington 1979

MO. 7295 Eryngium foetidum L. ! M. Mathias 1974

Rare. Only one seen, probably too shady for this weedy species.

Oct. 8, 1973

Canal Zone, Panamá
17PPA 436/083

MO, 14. ~~7296~~ 7296 Xylopia aromatica (Lam.) Eichl. det. R.L. 1974
Shrub 4 m. tall, 8 cm. diam. Brushy slope at Gamboa Golf Club. Petals reddish in bud. Fruit red within. alt. 50 m.

MO, , , . 7297 Crotalaria retusa L. det. R.L. 1974
Gravelly grassy roadside at Gamboa ~~Country~~ Golf Club. Petals yellow, standard with dull purple areas on outside. alt. 50 m.

MO, 7. 7298 Rub. Richardia scabra L. det. J.D. 1974
Gravelly grassy roadside at Gamboa Golf Club. Petals very pale blue. alt. 50 m.

17PPA 439/083 ±+7303
7299-7302 Shallow water at edge of Chagres River, golf course at Gamboa. alt. 30 m.

MO, 10. 7299 Gram. Paspalum repens Berg. det. G.D. 1974
Abundant.

MO, , , . 7300 Polygonum punctatum Ell. det. R.L. 1974
Flowers white.

MO, 5. 7301 Gram. Luziola subintegra Swallen det. G.D. 1974
Inflorescence in anthesis ~~also~~ just above water level, later immersed. Anthers bright yellow, stigmas white.

MO, , . 7302 Oryza latifolia Desv. det. G.D. 1974
2 m. tall. Occasional.

MO, 11. 7303 Gram. Acroceras zizanioides (HBK) Dandy det. G.D. 1974
Forming low loose stand at edge, sending down roots from long stem.

Oct. 8, 1973

Canal Zone, Panamá

17PPA ~~[illegible]~~ 439/080

MO, 5. 7304 Heliconia hirsuta L.f. det. T.C. 1973
Herb 2 m. tall in thicket at edge of golf course and Chagres River, Gamboa. Bracts yellowish-green, flowers yellow with green tip. Fruit yellow, turning blue. alt. 30 m.

17PPA 438/080

MO, 8. 7305 Panicum? Paspalum geminatum (Forsk.) Stapf.
Shallow water of pond, Gamboa golf course. alt. 30 m. det. G. D. 1974

17PPA ~~446/070~~ 448/068

MO, 18. 7306 Inga mucuna Walp. & Duchass. det. R. L. 1974
Small tree 8 m. tall, 10 cm. dbh along Gaillard Hwy, 2 km. SE of Gamboa at edge of secondary tropical moist forest. alt. 60 m. Filaments white, anthers yellow, corolla green, odorless. Apparently open in afternoon, wilted in morning. This tree collected in fruit Jan. 24, 1974 pub #9436.

17PPA 489/020

MO, 7. 7307 Ficus bengalensis L. det. C.C. Berg, 1983
Cult. tree in Summit Garden, alt.
Very wide spreading tree 10 m. tall with some branches parallel to ground and 25 m. long. Sending down supports near

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Canal Zone, Panamá

trunk. with abundant sticky white sap. Some branchlets leafless. Figs to ca. 1.7 cm. diam, green with lighter spots, red tip and ~~[illegible]~~ fig becoming tinged with red.

17PPA 491/019

MO, MAD, 7. 7308 Crotalaria vitellina Ker. det. R. L. 1973

MADw 32451 @ 2.5 m. tall. Petals yellow with dark lines on standard within, odorless. Old cement foundation, Summit Garden, overgrown with Panicum maximum, Solanum subinerme and other woods. alt. 80 m.

Oct. ~~8~~ 9, 1973

Canal Zone, Panamá
17PPA 488/020

7309-7310 Cult. trees, Summit Garden. alt. 80 m.

MO, wis, , , 7309 Lecythis minor Jacq. det. S. Mori 1974
, . Small spreading tree 7 m. tall. Petals white, yellowish green at middle on outside. A large black bee forces its way in between the staminode hood and the stamens.

17PPA 486/021
MO, 6. Tiliac. 7310 Kleinhovia hospita L. det. T. Croat ~~1974~~ 1973
Tree 12 m. tall with 7 trunks from the base. Flowers pink, one petal yellow at tip.

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Canal Zone, Panamá
ca. 17PPA 399/106-7

7311- 7371 Secondary tropical moist forest along Pipeline Road, 4 Km. NW of Gamboa. alt. 50 m.

MO, 6. 7311 Virola sebifera Aubl. ! A.G. 1974
Tree. Inflorescence rusty orange, sweet smelling.

MO, , , . 7312 Scheelea zonensis Bailey
massive, common, palm. Lower 3 m. of trunk bare, upper 3 m. covered with old and new leaf bases, old and new inflorescences. Leaves erect to 45°, ca. 9 m. long and with leaflets nearly to the base. Fruit orange brown, exocarp very fibrous, mesocarp a dull orange oily pulp, bland tasting but rather good (only tasted!).

7313- 7315 On Scheelea zonensis # 7312.

US. 7313 lichen
0.8 m. from ground, on trunk.

MO 7314 moss.
1 m. from ground, on trunk.

F, , . 7315 hepat.
on leaflets.

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Canal Zone, Panamá

17PPA 399/106-7

7316-7325 on 22 m. tall, 40 cm. dbh tree # 7326

MO 7316 moss. Cyrtohypnum involvens (Hedw.) Buck. + Crum at 5 m.

US. 7317 lichen 11 m.

US, . 7318 lichen 15 m.

US, . 7319 lichen 18 m.

F, . 7320 hepat 18 m.

US. 7321 lichen 19 m.

US, . 7322 lichen 19 m.

US. 7323 lichen 19 m.

F, . 7324 hepat dead branch at 19 m. det. J. Kuijt 1974

MO, 8 . 7325 Loranth. Oryctanthus occidentalis (L.) Eichl. Parasitic subshrub with branches to 0.5 m. long at top of canopy.

MO, , , . 7326 Rub. Pittoniotis tricantha Griseb. det. J. Dwyer 1974 Tree. 22 m. tall, 40 cm. dbh. Fruit turning red, almost all fallen.

MO, 8. 7327 Inga pauciflora Walp. + Duchass. det. R. L. 1974 small tree.

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Canal Zone, Panamá
17PPA 399/106-7

MO, 18. 7328 ♂ Margaritaria nobilis L.f. det. R. L. 1974
Small tree. Fruit green, splitting to reveal bright blue seeds.

MO, 18. 7329 Xylopia frutescens Aubl. det. R. Liesner, 1974
Small tree. Fut infested.

MO, 11. 7330 Inga pauciflora Walp. & Duchass. det. R. L. 1974
Tree 20 m. tall, 25 cm. dbh. tree. Bark hard.

7331-7356 On Inga #7330.

F, . 7331 hepat. Neckeropsis undulata (Hedw.) Reicht.
at 0.8 m.

MO 7332 moss. Cyrtohypnum involvens (Hedw.) Buck & Crum
0.5 m. from ground on 10 cm. diam. sprout.

US, , . 7333 lichen
4 m.

US, . 7334 lichen
4 m.

US, . 7335 lichen
4 m.

F, , , . 7336 hepat.
4 m.

F. 7337 hepat
4.5 m.

MO 7338 moss Lepidopilum
4.5 m.

F, , , . 7339 hepat.
6 m.

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Canal Zone, Panamá
17PPA 399/106-7

US. 7340 lichen
8 m.

US, . 7341 lichen
8.5 m.

US, . 7342 lichen
8.5 m.

US, , . 7343 lichen
9 m.

US. 7344 lichen
8 m.

US. 7345 ~~Hymenium~~ Coenogonium
10 m.

MO. 7346 moss.
on twig at 10 m.

MO 7347 moss?
10.5 m.

F, . 7348 hepat.
10.5 m.

US. 7349 graphid.
10-11 m.

US, , . 7350 lichen
11 m.

F. 7351 hepat.
13 m.

US, . 7352 lichen
13 m.

US. 7353 lichen
15 m.

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Canal Zone, Panamá
17PPA 399/ 106-7

US. 7354 lichen
14 m.

US. 7355 lichen
14 m.

US, . 7356 ~~bryophyte~~ lichen
18 m.

7367-7370
7357-~~7364~~ 7365 On *Terminalia*
#7366, a 20 m. tall 30 cm. dbh. tree.

US, , . 7357 lichen
3 m.

US. 7358 lichen
5 m.

US. 7359 lichen
6 m.

US, . 7360 lichen
6 m.

US. 7361 lichen
8 m.

US, , . 7362 lichen
8 m.

MO 7363 *Octoblepharum albidum* Hedw.
11 m.

MO 7364 moss *Sematophyllum adnatum* (Mich.) Britt
at 15 m. on twigs.

F, , . 7365 hepat.
at 15 m. on twigs

Oct. 9, 1973

Canal Zone, Panamá
17PPA 399/106-7

MO, , . 7366 Terminalia amazonia (J.F. Gmel.) Exell
Tree 20 m. tall, 30 cm. dbh, with finely fissured bark. Sterile. det. R. Liesner, 1975

~~7366~~ 7367-7370 on 7366.

US, . 7367 lichen
14 m.

F, , . 7368 hepat.
14 m.

7369

US, . 7370 lichen
14 m.

MO, , . 7371 Sorocea affinis Hemsl. ! J.C. 1974
Slender shrub 3 m. tall. Fruit green, pome tinged with red, rachis reddish.

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Oct. ~~9~~ 10, 1973

Canal Zone, Panamá
17PPA 484/022
MO, 6.

7372 *Terminalia muricata*
Large spreading tree 1.4 m. dbh.
Cult. tree across Gaillard Hwy. from entrance to Summit Garden. Flowers greenish, fruits reddish. Some branches with abundant fruit, most of tree sterile.

Oct. ~~10~~ 11, 1973

Canal Zone, Panamá

17PPA 430/075

MO, 5. 7373 Anemia pastinacaria Prantl det. D.L. 1977
Partly shaded clay roadside bank along Gaillard Hwy. at Chagres River bridge, Gamboa. alt. 30 m.

17PPA 432-5/075-6

7374-7377 Closely mowed roadside along Chagres River on road to golf course, Gamboa. alt. 30 m.

MO, 12. 7374 Eragrostis unioloides (Retz.) Nees det. G.D. 1974
Common.

MO, 4. 7375 Paspalum centrale Chase det. G.D. 1974

MO, 4. 7376 Digitaria Axonopus capillaris (Lam.) Chase " "

MO, 16. 7377 Gram. Anthephora hermaphrodia (L.) Kze " "
Occasional

17PPA 434/076

MO, 15. 7378 Borag.? Cordia ~~heterophylla R.&S.~~ panamensis Reiley ?
Shrub 8 m. tall, 15 cm. diam. in thin woods at edge of pond. Along road to golf course along Chagres River, Gamboa. alt. ~~35 m.~~ 30 m.

17PPA 434/077

MO, 20. 7379 Inga punctata Willd. det. R.L. 1974
Spreading tree 8 m. tall, 35 cm. dbh at playground on top of hill, Gamboa. alt. 45 m. Filaments white. Same tree coll. in fruit on Feb. 8, 1974 sub # 9564

17PPA 437/079

7380-7381 Clay roadside bank at Yacht Club on Chagres River, Gamboa. alt. 30 m.

Oct. 11, 1973

Canal Zone, Panamá
17PPA 437/079

MO, 10. 7380 Sapind. Serjania rhombea Radlk. det. T.C. 1974
Vine. Fruit green, turning reddish.

MO, 20. 7381 Hackelochloa granularis (L.) Kze ! G. Davidse 1974
Often stunted.

17PPA 432/075
MO, 16. 7382 Witheringia solanacea L'Her. det. D'Arcy XII.1973
1 m. tall. Corolla reflexed, yellow, berries turning bright orange. Leaves wilting very rapidly. With Piper, Panicum maximum on roadside along Chagres River near bridge at Gamboa. alt. 30 m.

Oct. 12, 1973

Canal Zone, Panamá

17 PPA 483/018

MO, 10. 7383 Comp. Milleria quinqueflora L. R.L. 1976
Herb to 1.5 m. tall. with Panicum maximum on weedy roadside, ½ km. S of Summit Gardens. alt. 75 m. Rays yellow, disc corollas greenish yellow.

17PPA 484/ 017-018

MO, 7. 7384 Paspalum fasiculatum Willd. ex Fluegge det. G.D. 1974
To 2 m. tall at edge of pond and shallow water across from entrance to Navy Communications Station, ½ km. S of Summit Gardens. alt. 75 m.

MO, 5. 7385 Legume. Clitoria rubiginosa Juss. det. R.L. 1973
Herbaceous vine in thicket at edge of pond across from entrance to Navy Communications Station, ½ km. S of Summit Gardens. alt. 75 m. Flowers odorless. Petals white with purple lines on the large one.

7386-7387 Thicket ½ km. S of Summit Gardens. Alt. 75 m.

MO, 4. 7386 Gram. Lasiacis procerrima (Hack.) Hitchc. det. G.D. 1974
To 3 m. tall, mostly unbranched.

MO, , . 7387 Bignon. Phryganocydia corymbosa (Vent.) K. Schum. A. Gentry 1975
Vine. Flowers with faint sweet fragrance. Corolla lobes purple, throat white with purple lines.

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Oct. 12, 1973

Canal Zone, Panama
17PPA 482/020

Oenocarpus mapora Karst. det. g. de Nevers

MO, , . 7388 Palm. Euterpe panamensis Burret
MADw 32452 (w) Dense clump of slender stems 12 m. tall. Cultivated in Summit Gardens. Alt. 80 m. with crown shaft. Blade to 2 m. long. Only fallen inflorescences and young ones hidden within crown shaft. det. T. Croat. 1976

7389 - 7401 ON # 7388

US. 7389 lichen
2 m.

US, . 7390 lichen
2.5 m.

US. 7391 lichen
2.5 m.

US, . 7392 lichen
3 m.

US, . 7393 lichen
3 m.

US, . 7394 lichen
3 m.

US, . 7395 lichen
3 m.

US. 7396 lichen
5 m.

US, . 7397 lichen
7 m.

Oct. 12, 1973

Canal Zone, Panamá
17PPA 482/020

US, 7398 lichen
7 m.

US. 7399 lichen
8 m

US. 7400 lichen
8 m.

F. 7401 hepat
8 m.

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Oct. 13, 1973

Canal Zone, Panamá
17PPA 488/019

7402-7403 On cultivated *Lecythis* tree, on 5 cm. diam. lower branch. Summit Garden, alt. 80 m.

MO, 4. 7402 Loranth. *Oryctanthus occidentalis* (L.) Eichl. Shrubby parasite. det. J. Kuijt 1974

MO, 4. 7403 Loranth. *Phthirusa pyrifolia* (HBK.) Eichl. det. J. Kuijt 1974
Parasite on # 7402!

17PPA 425/078

MO, 23. 7404 *Chloris barbata* Sw. det G. D. 1974
Railroad siding, Gamboa. alt. 30 m.

Oct. 14, 1973

Canal Zone, Panamá
17PPA 489/020

March, ~~Jan~~ 1974
det. T.R. Soderstrom from fragment sent to US.

MO, MAD, 35. 7405 bamboo Cephalostachyum pergracile Munro
MADw 32453 ⓦ Dense clump of stems to 5.5 cm. diam., 10 m. tall. Cultivated in Summit Garden, alt. 75 m.
The fascicles of branches to ca. 2 m. long loosing their leaves and the whole plant becoming floriferous.

see photo on March 21, 1974

US. 7406 lichen
1.5 m. from ground on dead culm of bamboo # 7405.

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ca. 17PPA 420/085

MO, 9. 7407 Cuestidium rufescens Tr. & Pl. Planch ! T. Croat 1974
Vine to 8 m. at edge of secondary tropical moist forest on road up to Cerro Pelado radar station. alt. ca. 120 m. ½ Km. NW of Gamboa.

17PPA 423/088

7408-7417 Secondary tropical moist forest near summit of Cerro Pelado, alt. 200-220 m. 1 Km. N of Gamboa.

Oct. 14, 1973

Canal Zone, Panamá
17PPA 423/088

MO, 10. 7408 Pera arborea Mutis ♂ ! R.L. 1974
Tree 15 m. tall, 40 cm. dbh. Abundant ~~flowering~~ odorless flowers. Hood pale greenish, anthers dark brown, pistillodes greenish yellow. This species common at summit.

US, . 7409 lichen
1 m. from ground on ~~7410~~ Pera arborea (7408).

MO, 16. 7410 Pera arborea mutis ♀ ! R.L. 1974
Small tree 8 m. tall. Many flowers but few fruits. Hood pale green, ~~pistils~~ stigmas greenish yellow. Fruit green.

MO, 8. 7411 Laurac. Nectandra gentlei Lundell det. L. Holdridge 1977.
5 m. tall. Flowers yellowish green.

MO 7412 moss.
1.2 m. from ground on shrub.

US, . 7413 ~~Hymenium~~ Coenogonium
0–0.5 m. from ground on shrub.

MO, MAD, 19. 7414 Miconia holosericea (L.) DC. det. R.L. 1974
MADw 32454 (w) Shrub 6 m. tall. Fruit green.

MO, , . 7415 Hymenophyllum brevifrons Kunze det. D.L. 1977
Covering stem of shrub from 1 to 1.5 m.

MO. 7416 Bromel
On shrub 1.5 m. from ground.

MO, 7. 7417 Cespedesia macrophylla Seem. ! R.L. 1974
Small tree 10 m. tall, 20 cm. dbh. The terminal panicle 1 m. long. Petals, stamens, pistil (the tip is greenish yellow) bright yellow,

Oct. 14, 1973

Canal Zone, Panamá
17 PPA 423/088

fragrant. Pollen white.

Ca. 17 PPA 421/084
MO, MAD, , . 7418 Cassia maxonii (Br. + Rose) Schery det. R. L. 1973
MADw 32455 (w) Slender shrub 2 m. tall. Flowers dull yellow. Edge of secondary tropical moist forest ~~on~~ along road up to Cerro Pelado Radar station, ½ km. NW of Bamboa. Alt. 100 m.
Senna hayesiana (B. + R.) I. + B.

Oct. 15, 1973

Canal Zone, Panamá
17PPA 488/020

~~MO~~ 7419-7421 Summit Garden. alt. 80 m.
Bauhinia malabarica Roxb. det. Wunderlin 1975

MO, 19. 7419 ? Bauhinia variegata L.
~~Bau~~ Cult. tree 10 m. tall, 50 cm. dbh, spreading and with outer limbs touching the ground. With abundant ~~flowers~~ hanging flowers. Petals white with pink margins.

MO, 25. 7420 Loranth. Phoradendron
Epiphytic shrub with brittle branches. Abundant on #7421.

MO, . 7421 Moraceae. Ficus lutea Vahl
Small cult. spreading tree, 8 m. tall, with aerial roots twining around trunk and lower branches. Sterile.
Coll. in fruit March 13, 1974 sub # 10536.
Det. C.C. Berg, 1982

Oct. 16, 1973

Canal Zone, Panamá
17PPV 582/902

US, , , , . 7422 lichen.
Near base of cult. Swietenia tree, Balboa. alt. 5 m.

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ca. 17PPA 420/085
MO, 19. 7423 Doliocarpus major Gmel. det. R.L. 1974
Vine to 4 m. Fruit red, splitting. Seed black, aril juicy and white. Edge of secondary tropical moist forest along road up to Cerro Pelado radar station, ½ km. NW of Gamboa. alt. ca. 120 m.

MO, 4. 7424 ? Maripa panamensis Hemsl. det. D.F. Austin 1974
Woody vine to 10 m. at edge of ~~two~~ secondary tropical moist forest along road up to Cerro Pelado radar station, ½ Km. NW of Gamboa. alt. ca. 150 m.

17PPA. 423/088
7425-~~8~~7439 Secondary tropical moist forest near summit of Cerro Pelado, 1 km. N of Gamboa, alt. 200-220 m.
MO, , . 7425 Malpigh. Banisteriopsis muricata (Cav.) Cuatrec.
Woody vine densely covering top of 12 m. tall tree. Just beginning to bloom — a mass of buds. Petals light purple. det. T. Croat, 1975

Oct. 16, 1973

Canal Zone, Panamá
17PPA 423/088

MO, 11. 7426 Rub. Sabicea villosa HBK. det. J. D. 1974
Vine to 8 m. Corolla white, berries turning dark red.

MO, 24. 7427 Byrsonima spicata (Cav.) HBK
Tree 10 m. tall, 20 cm. dbh. Fruit green.

~~7428~~ 7428 - 7433 On Byrsonima spicata (#7427)

US. 7428 lichen
1.5 m.

US, . 7429 lichen
1 m.

US, . 7430 lichen
2 m.

US, . 7431 lichen
2 m.

F, , . 7432 hepat.
1.5 m.

US. 7433 lichen
1.5 m.

US. 7434 ~~Hymenium~~ Coenogonium
1.5 m. from ground on small tree.

MO, . 7435 ~~Fa~~ Sapind Paullinia pugosa Benth. ex Radlk. ! T.C. 1974
Vine to at least 8 m. Fruit bright orange, aril white, seed black.

MO. 7436 fern. Asplenium falcinella Maxon D.L. 1977
Epiphyte 1.5 m. from ground on small tree.

Oct. 16, 1973

Canal Zone, Panamá
17PPA 423/088

MO, 8. 7437 Hymenophyll. Trichomanes pinnatum Hedw.
Terrestrial. D.L. 1977

MO, , . 7438 fern. Polypodium wagneri Mett. D.L. 1977
Epiphyte at 4 m. from ground on slender palm.

MO, . 7439 Heliconia catheta R.R. Smith det. T.C. 1974
Herb 3 m. tall. Inflorescence pendant.
Rachis red. Bracts red at base, greenish
yellow distally. Fruit yellow, turning blue.

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ca. 17PPA 420/085

7440-7441 Secondary tropical moist forest along road
up to Cerro Pelado radar station, ½ km.
NW of Bamboa, alt. ca. 100 m.

MO, . 7440 Annona ~~spragei~~ spraguei Saff. ! R.L.
Tree 12 m. tall, 25 cm. dbh. Very few
fruits seen, a few green ones, a few old
rotten ones.

US, , . 7441 lichen
Common on trunk of ~~7440~~ Annona
spraguei #7440.

Oct. 17, 1973

Canal Zone, Panamá
17 PPA 469-72/035-6

7442 - 7456 Secondary tropical moist forest along Gaillard Hwy, 2 km. NW of Summit Garden. alt. ca. 100 m.

det. H. Kennedy, 1975

MO, . 7442 Ischnosiphon pruinosus (Regel) Petersen
Herb 1 m tall. Leaves green above, purple beneath. Flowers purple and yellow.

MO 7443 moss.
Rotten stump of shrub.

MO 7444 moss.
Covering base of trunk of fallen Scheelea zonensis palm.

MO, MAD, 15. 7445 Rub. Psychotria patens R. & P. det. J. D. 1974
MADw 32456 ⓦ Slender shrub 2 m. tall. Inflorescence branches purple. Fruit spongy juicy, to 1 cm. diam, pale purple to almost white.

MO, MAD, 23. 7446 Xylopia aromatica (Lam.) Mart.
MADw 32457 ⓦ Small tree 12 m. tall, 20 cm. dbh with characteristic long slender branches. Fruit red. Flowers sweetly fragrant, outer petals recurved, red on outside, white within, inner petals white with two purple spots at base. det. R. Liesner, 1974.

MO, 12. 7447 Paspalum multicaule Poir. det. G.D. 1974
Clumps in bare open graveland clay of roadside.

Oct. 17, 1973

Canal Zone, Panamá
17PPA 469-72/035-6

MO, 4. 7448 Genipa americana L. det. J.D. 1974
Shrub 4 m. tall on roadside bank. Fruit held erect, white within but blackening on drying.

MO, 10. 7449 Fern. Trichopteris microdonta (Desv.) Tryon D.L. 1977
Roadside thicket. Stem 1 m. tall, petiole ca 1.2 m. long, blade 1.5 m. long.

MO, MAD, 6. 7450 Cassia maxonii (Br. & Rose) Schery. det. R.L. ~~1977~~ 1973
MADw 32458 ⓦ ~~Shrub 4~~ Slender shrub 4 m. tall. Petals yellow. = Senna hayesiana (B. & R.) I. & B.

MO, . 7451 Calathea altissima
Herb 2.5 m. tall, acaulescent. Fruit orange.

MO, 6. 7452 fern. Ananthacorus angustifolius (Sw.) Underw. & Maxon.
On boulder. det. D.L. 1977.

MO, 7. 7453 Polypodium polypodioides (L.) Watt.
On boulder at edge of forest. D.L. 1977.

MO, , . 7454 Fern. Polypodium wagneri Mett. P. hygrometricum Splitg. A.R. Sm. 1985
on boulder det. Hellinger, 1983

MO, 6. 7455 Bromel. Bromelia karatas L.
Terrestrial. Leaves to almost 3 m. long. Inflorescence a dense cluster. Fruit red outside, white and juicy within, seeds light brown.

MO, 11. 7456 Solanum subinerme Jacq. ! D'Arcy 1974
Shrub 2 m. tall in roadside thicket. Flowers with thick sweet odor. Corolla purple.

Oct. 18, 1973

Canal Zone, Panamá
17PPV 580/899

MO 7457 moss.
On soil in grassland with scattered shrubs, Sosa Hill, Balboa. alt. 10 m.

7458-7459 On log, thicket at base of Sosa Hill, Balboa. alt. 5 m.
US, , . 7458 lichen.
US. 7459 Graphid.

17PPA 487/020
MO, 11., , , 7460 Acacia auriculaeformis det. R.L. 1974
Large cultivated tree 1 m. dbh. Flowers yellow. Summit Garden. alt. 80 m.

7461-7463 On Acacia (#7460)
US, , , , . 7461 lichen
0.5-1.5 m.
US, , , , , 7462 lichen
, . 2 m. Common far up the trunk.
US, , . 7463 Graphid.
2 m.

[Oct. 16, 1973]

Canal Zone, Panamá
17PPA 423/088

7464-7478 At 8 m. on branches of Byrsonima ~~[illegible]~~ spicata (# 7427). [See pp. 153-154 for info. I sorted these out later and gave them numbers]

US. 7464 graphid
US. 7465 lichen
US. 7466 graphid.
US. 7467 graphid.
US, , . 7468 lichen
US. 7469 graphid
US. 7470 Graphid
US, . 7471 graphid?
US, . 7472 graphid
US. 7473 lichen
US. 7474 graphid
US. 7475 lichen
US. 7476 lichen
F, , , . 7477 hepat.
F, , . 7478 hepat.

Oct. 20, 1973

Canal Zone, Panamá
17PPA 478-482/032-035

7479-7495, 7510-7514 Secondary tropical moist forest along road to radar station on Semaphor Hill, 1 Km. N of Summit Garden. alt. 100-150 m.

MO, 8. 7479 Inga pauciflora Walp. & Duchass.
Small tree 12 m. tall, 15 cm. dbh. det. T.D. Pennington

7480-7483 6 m. from ground on branches of Inga (# 7479).

US, , . 7480 lichen
US, , . 7481 lichen
US, , . 7482 Graphid
US, , . 7483 Graphid.

MO, , . 7484 Casearia sylvestris Sw. var. sylvestris det. Sleumer, 198-
Shrublet 3/4 m. tall. Flowers pale greenish.

MO, 5. 7485 Setaria paniculifera (Stend.) Fourn.
Roadside. S. paniculata (Stend.) Fourn. det. G.D. 1974

MO, 11. 7486 Byttneria aculeata Jacq. ! R.L.
Vine covering shrubby opening and climbing to at least 10 m. Flowers with faintly sweet odor, yellowish green.

MO, 3. 7487 Polypodium polypodioides (L.) Watt. polypodioides
Epiphyte on tree branch. D.L. 1977

MO, , . 7488 Vanilla
Sterile vine climbing tree to at least 10 m. Leaves 3 mm. thick, stem 2 cm. thick.

Oct. 20, 1973

Canal Zone, Panamá

17 PPA 478-482 / 032-035

7489-7492 Roadside bank.

MO, 6. 7489 Selaginella horizontalis (Presl) Spring det. Hellinger, 1983.

MO, 7. 7490 Adiantum lunulatum Burm. D.L. 1977.

MO. 7491 Habenaria avicula Schtr.
Flowers greenish, odorless. det. G. Carnevali, 1990

MO 7492 moss. Cyrtohypnum involvens (Hedw.) Buck & Crum

MO, MAD, 11. 7493 Cordia panamensis Riley det. R. Liesner, 197-
MADw 32459 (w) shrub 5 m. tall, 6 cm. diam. with softwood.
Fruit green, turning dull white, to 1 cm. diam., juicy and sticky.

MO, 6. 7494 Bursera simaruba (L.) Sarg. ! T.C. 1974
Spreading tree 14 m. tall, 40 cm. dbh. with characteristic peeling brown bark. Foliage with resinous odor, fruit green.

US, , , . 7495 lichen.
On lower trunk and undersides of branches of Bursera simaruba (#7494), apparently the only places on the tree where the bark is stable enough for lichens to colonize.

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17 PPA 475/032

7496-7497 Secondary tropical moist forest at bridge over Río Masambi Grande on road to radar station, 1 km. NW of Summit Garden. alt. 75 m.

MO, 7. 7496 Legum. Mimosa quadrivalvis L. det. R.L. 1974
M. diplotricha Weedy roadside. Scrambling to 2 m. tall.
Sauvalle det. Gentry 199-
Inflorescence first deep pink, later fading. Leaves sensitive.

Oct. 20, 1973

Canal Zone, Panamá

17PPA 475/032

MO, 3. 7497 (Polypodium) Campyloneurum phyllitidis (L.) Presl
Common epiphyte on large trees. D.L. 1977

17PPA 475/031

MO, 6. 7498 ~~Flacourt.?~~ Euphorb Adelia triloba (Muell. Arg.) Hemsl.
Shrub 6 m. tall, 10 cm. dbh. along Río Masambi Grande upstream from Gaillard Hwy, 1 km. NW of Summit Garden. Flowers greenish. alt. 70 m. det. R. Liesner, 1975

17PPA 480/024

MO, 6. 7499 Annona spraguei Saff.
Small tree 8 m. tall, 20 cm. dbh. along Gaillard Hwy, ½ km. NW of Summit Garden. alt. 90 m. Common in the secondary tropical moist forest in the vicinity. One ripe fruit yellow, 7.5 x 6 cm., opened on one side and half the white pulp and brown seeds neatly removed.

I had seen a number of these on my way up the Semaphor Hill radar station road to ca. 150 m. (all the farther I went) but as I didnt have my clipper pole along, I couldnt reach them.

Oct. 20, 1973

Canal Zone, Panamá

ca. 17PPA 420/081-2

7500-7509 1/2 km. W of Gamboa, alt. 30 m.

MO, 15. 7500 Ficus insipida Willd. det. Conrad
Large tree ca. 1 m. dbh with copious milky sap. Figs shiny green with light spots and reddish at tip. Every leafy twig on the tree seems to be bearing fruit.

MO, 6. 7501 Gesner. Drymonia serrulata (Jacq) Mart.
Vine to 8 m. at edge of woods. Fruit bright red within. det. L. E. Skog 1977

17PPA 417/082

7502-7508 Open marsh with Typha.

MO, 5. 7502 Cyperus giganteus Vahl det. G. Davidse, 197-
To 2.5 m. tall.

MO, , . 7503 Fern. Acrostichum aureum L. D.L. 1977
Common, forming large clumps "floating" on the waterlogged muck. Fronds to 3 m. tall, only a few pinnae at end fertile.

MO, 6. 7504 Fern. Thelypteris interrupta
Common. D.L. 1977.

MO, 9. 7505 Fuirena umbellata Rottb.
Scattered. det. G. Davidse, 197-

MO, , , . 7506 Cyperus odoratus L. "

MO, 7. 7507 Polygonum punctatum L. det. R.L. 1974
Flowers white.

Oct. 20, 1973

Canal Zone, Panama
17PPA 417/082

MO, 5. 7508 Pontederia rotundifolia L.f.
Common, crawling over ground at edge or more commonly becoming upright and forming stands to 1.5 m. tall. Corolla pale purple with two yellow orange spots.

MO 7509 moss.
On buttresses and exposed roots of large Ficus at edge of marsh.

17PPA 478-482/032-035

7510-7514 At 0.5 m. from ground on Cordia (#7493)

US. 7510 lichen

US, . 7511 lichen

US. 7512 lichen

US, . 7513 lichen

US, . 7514 lichen

Oct. 21, 1973

Canal Zone, Panamá
17PPA 486-489/020-023

7515-7530 Summit Garden. alt. 80 m.

7515-7519 Base of young cultivated Roystonea regia.

US, . 7515 lichen
US, , . 7516 lichen
MO 7517 moss?
F. 7518 hepat
US, , . 7519 lichen

7520-7525 On 75 cm. dbh. cultivated Swietenia.

US, . 7520 lichen
base to 1 m.
US, 11. 7521 lichen
0.5-1.5 m. common.
US, , , , . 7522 lichen
base to 1 m.
US. 7523 lichen
base to 1.5 m.
US. 7524 lichen
2 m.
US, , . 7525 lichen
2 m.

MO, 6. 7526 Ficus
Small ~~spred~~ spreading cultivated tree with copious milky sap. Only a few ripe figs, to 2.5 × 3.5 cm.,

 Oct. 21, 1973

Canal Zone, Panama
17PPA 486-9/020-3

light to dark orange with lighter spots.

MO, 7. 7527* Terminalia muelleri Benth. (Australian sp.)
Spreading cultivated tree, 8m. tall, 45 cm. dbh.
Fruit green. det. C.A. Stace, 1982

US, , , . 7528 lichen
at 2 m. from ground on 7527.

MO, 8. 7529 Elaeocarpus serratus L.? det. R.L. 1976
Small cult. tree with slightly buttressed trunks
30 cm. dbh. Flowers hanging, ~~odor~~ faint
odor, petals white, laciniate. Very
young fruit erect. [disc orange]
Ripe fruit dull orange, ca. 2.5 x 3 cm.

MO, , . 7530 orchid Polystachya foliosa (Hook.) Rchb.f.
Common on a spreading mimosoid shrub.
Flowers greenish yellow, odorless.
det. R.L. Dressler, 2002

17PPA 407/083
7531 - 7533 Secondary tropical moist forest near airstrip
2 km. W of Gamboa. alt. 35 m.

MO, , , . 7531 ~~Tetragonia~~ Pentagonia macrophylla Benth. det. J.D. 1974
Slender shrub 2.5 m. tall. Foliage spicy
fragrant.

Oct. 21, 1973

Canal Zone, Panama
17PPA 407/083

MO. 7532 Bactris
Slender palm 4 m. tall, 3 cm. diam., in loose colony. Stem spiny to base. The inflorescence with immature fruit from two nodes above the lowest green leaf. Bactris cf. barronis also present here.

MO, 7. 7533. Cecropia peltata L. det. T.C. & J. Conrad 1974
Small tree 10 m. tall, 20 cm. dbh. at edge of road.

17PPA 416/080

MO, 18. 7534 Asclep. Funastrum clausum (Jacq.) Schltr.
Common vine (the only vine) on guard fence between ~~the~~ Dredging Division and RR, 1 km. W of Gamboa, alt. 30 m.
Flowers white, odorless (6:00 P.M.), visited by a "hawk moth". det. W.D. Stevens ~~[illegible]~~ 2004

Oct. 23, 1973

Canal Zone, Panamá
17PPA 478-81/019-022

7535-7537 Roadside ½ km. W of Summit Gardens. alt. 70 m.

MO, . 7535 Rub. Genipa carito L. det. J. Dwyer, 1975
Shrub 7 cm. diam., 4 m. tall. ♀ Corolla white.

MO, 27. 7536 Malpigh. Banisteriopsis muricata (Cav.) Cuatrec.
det. T. Croat, 1975 Vine to at least 4 m. on shrubs. Petals pink, fading almost to white. ± same vine coll. in fruit Jan. 29, 1974 [Sub # 9488]

MO, 14. 7537 Urtic. Laportea aestuans (L.) Chew. det. R. L. 1974
Herb 1.4 m. tall. Shady roadside.

17PPA 399/107

7538-7552 Secondary tropical moist forest along Pipeline Road, 4 Km. NW of Gamboa. alt. 50 m.

MO, 8. 7538 Laur. Nectandra umbrosa (HBK.) Mez. det. J. Rohwer, 1990
Nectandra purpurea (R. & P.) Mez. det. H. vd. Werff, 1984
Tree (14 m.) tall, wood very hard. Fruit black.

MO, 12. 7539 Alseis blackiana Hemsl. ! J. D. 1974
Tree 18 m. tall, 30 cm. dbh. Bark brown, shredding. Fruit green, splitting during drying.

7540-7552 On Alseis blackiana (# 7539)

MO, . 7540 Loranth. Phoradendron obliquum (Presl) Eichl. det. J. Kuijt, 1976
Small epiphytic shrub on upper branches.

MO 7541 moss.
1.5 m.

Oct. 23, 1973

Canal Zone, Panamá
17PPA 399/107

MO 7542 moss
4 m.

F, , . 7543 hepat
5 m.

MO 7544 moss. Sematophyllum
6 m.

US, , . 7545 lichen
6 m.

MO 7546 moss
8 m.

F, , . 7547 hepat.
8 m.

US, , , . 7548 lichen
10 m.

US, . 7549 lichen
13 m.

US. 7550 lichen
14.5 m

F. 7551 hepat
15 m.

F, , . 7552 hepat.
On upper twigs, just below the leaves.

17PPA ~~354/1556~~ 362-3/146-7
7553 – 7556 ~~Tropical~~ premontane wet forest along Pipeline Road, ~~#~~ 9 km. NW of Gamboa ~~along~~ ~~#~~ alt. ~~125~~ ~~m.~~ 150 m.

170 Oct. 23, 1973

Canal Zone, Panamá

17PPA ~~[illegible]~~ 362-3/146-7

MO, , . 7553 Dicranopteris pectinatum (Willd.) Underw. D.L. 1977
With Gleichenia bifida (#7554) covering roadside bank.

MO, 5. 7554 Gleichenia bifida (Willd.) Spreng. ! D.L. 1977
with Dicranopteris (#7553) covering roadside bank.

MO, , , . 7555 Cassia maxonii (Britt. & Rose) Schery det. R.L. 1975
Arching single stemmed shrubs 2 m. tall at clearing for pipeline. alt. 130 m.

MO. 7556 Asclepias curassavica L.
Roadside.

Oct. 24, 1973

Canal Zone, Panamá
17PPA 482/022

7557-7558 Semi-natural secondary tropical moist forest with a few Roystonea etc., along railroad on W ~~side~~ side of Summit Gardens. alt. 70 m.

MO, 14. 7557 Inga punctata Willd. det. R.L. 1974
Tree 12 m. tall. Filaments white. On a sunny morning, numerous butterflies (at least 5 spp.) attracted to flowers.

MO, 8. 7558 Inga punctata Willd. det. R.L. 1974
Tree 12 m. tall. Filaments white.

MO, MAD, 15. 7559 Crotalaria vitellina Ker. det. R.L. 1974
MADw 32460 (w) 2 m. tall. Flowers yellow. With Panicum maximum, Sorghum spontaneum ~~along~~ grassy ~~railroad~~ area along the railroad, W side Summit Gardens. alt. 75 m.

172 Oct. 25, 1973

Canal Zone, Panamá
17PPA 406-7/083

7560-7563 2 Km. W of Damboa near Chagres airstrip. alt. 30 m.

MO, , , . 7560 Bactris barronis Bailey
Secondary tropical moist forest. Dense clump of 10 stems to 2 m. tall, only 3 inflorescences seen. Stems spiny to base. Inflorescence from lower leaf axils, the leaf ± dead by the time the fruit ripe (orange). Leaves irregularly pinnate, especially below, petiole ca. 1.5 m. long, blade 2 m.

MO, , . 7561 Piper tuberculatum Jacq. det. J. Conrad 1974
Shrub 1 m. tall in thicket by pond. Spikes erect.

MO, 15. 7562 Gram. Brachiaria mutica (Forsk.) Stapf. det. G. D. 1974
Generally unbranched, forming a loose mat to 1.5 m. tall at edge of pond.

MO, 6. 7563 Poinsettia heterophylla (L.) Kl. & Gke.
Grassy thicket along RR. Bracts light green at base. ! R.L. 1974

Oct. 26, 1973

Canal Zone, Panamá
ca. 17PPA 398/109

7564-7583 Secondary tropical moist forest along Pipeline Road, 4 km. NW of Bamboa. alt. 50 m.

MO, 31. 7564 Mimo. Acacia glomerosa Benth. det. R.L. 1975
Tree 14 m. tall, 25 cm. dbh, buttressed to 0.5 m.
Flowers white, fragrant. Bark hard, fairly smooth.
~~7564~~
7565-7581 on # 7564

MO. 7565 orchid. Polystachya
In crotch at 6 m. Flowers yellow, odorless.
~~7~~ 7566-7569 at 8 m. on # 7564.

US, . 7566 Graphid.
US, . 7567 Graphid.
US, . 7568 Graphid.
US, , . 7569 Graphid.

MO 7570 moss.
0.5 m.

US. 7571 ~~Hypnum~~ Coenogonium
from base to 0.5 m.

MO 7572 Octoblepharum albidum Hedw.
at 2 m. Scattered small patches from base to at least 6 m.

US, , , 7573 lichen
, , . 8 m.

US, , . 7574 lichen
9 m.

US, , . 7575 lichen
9 m.

Oct. 26, 1973

Canal Zone, Panamá
17PPA 398/109

US, , . 7576 Graplid.
9 m.

US, . . 7577 Graplid
10 m.

7578-7581 On top branches.

F. 7578 hepat.

US. 7579 Graplid.

US. 7580 Graplid.

F, . 7581 hepat.

MO, 5. 7582 Malpigh. Stigmaphyllon lindenianum Juss. Vine trailing across open clay of pipeline clearing. Flowers yellow. Wings of fruit reddish. det. T. Croat, 1975.

MO, , , . 7583 Homolepis aturensis (HBK) Chase & ! G. D. 1974
Open clay of pipeline clearing.

My jeep was working for the first time in weeks. I had first stopped here to watch the Tropical Test Center of the army push over trees with a truck. I talked with Dean Neptune. This is a good place to collect trees but there wasn't much fresh stuff so I decided to go on, looking for Al Gentry's new species of Bignon.

By the way, the mimosoid #7564 I had to climb. It was infested with ants and the upper branches were spiny, but as it was in full bloom, I had to get it and after hacking off a branch I couldn't very well leave without getting numerous duplicates.

Oct. 26, 1973

Canal Zone, Panamá

17PPA 372/139

7584-7600 Along Río Mendosa, ½ km. upstream from Pipeline Road bridge, 8 km. NW of Bamboa. alt. 100 m. Tropical Premontane wet forest.

MO, . 7584 Acanth. Aphelandra sinclairiana Nees
Shrub 3 m. tall. Bracts red. det. L.H. Durkee 1977

MO, 8. 7585 Olmedia aspera R. + P. ! C.C. Berg 1976
♀ Shrub 5 m. tall arching over river. Fruit splitting, ~~inside & lo~~ lobes orange with green margins.

MO, . 7586 Cyclanthus bipartitus Poit. det. A.J. Hicks 1976
Acaulescent or on cauder to ½ m., 2-3 m. tall. Petiole with milky sap.

MO, 13. 7587 ?~~Polypodium~~ Thelypteris cuminginiana (Kunze) Reed
Rocky bank along river. D.L. 1977

MO, 21. 7588 Hymenophyll. Trichomanes collariatum v.d. Bosch.
Vine climbing to 3 m. on shrub. D.L. 1977

MO, , , . 7589 Fern. Thelypteris curta (Christ) Reed
Rocky bank det. D.L., 1983

MO, . 7590 Gentian. Voyria tenella Hook. det. P.J.M. Maas 1978
Scattered on ground in forest, one clump of many stems seen. Corolla lobes blue, throat yellow.

MO. 7591 ~~Polypodium~~ Pleopeltis percussa (Cav.) Hook + Grev.
Epiphyte, on ~~branch~~ & fallen branch. D.L. 1977

MO. 7592 fern. Polybotrya caudata Kunze D.L. 1977.
on boulder. Fronds dimorphic Maxonia apiifolia (Sw.) C. Chr. det. R. Morgan, 1986

MO, , , . 7593 Ischnosiphon leucophaeus (P.) Koern. det. H. Kennedy 1974
Flowers white.

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Canal Zone, Panamá
17PPA 372/139

MO. 7594 Calathea insignis Petersen ! H. Kennedy 1974
Bracts greenish yellow.

MO, 5. 7595 Saranía laevigata Tr. + Pl. det. R.L. 1974
Shrub 6 m. tall. Fruit watery, pale green, splitting, peels brown.

MO, MAD, 5. 7596 Cyphomandra hartwegii (Miers) Dun. det. D'Arcy 1974
MADw 32461 @ Shrub 3 m. tall. Petals green, glossy within, eventually reflexing. Stamens white, connective blue.

MO. 7597 ? Hymenocallis pedalis Herb.? det. R.L. 1979
Terrestrial herb. Peduncle 1.5 x 3 cm. ⬭
Fruit in dense head, 1.8 cm. x 3 cm., soft, green, grading to almost white at base.

MO, . 7598 Commel. Dichorisandra hexandra (Aubl.) Standl.
1.5 m. tall branched herb. Fruit green, purple at tip. R.L. 1976

MO, , , . 7599 Aechmea magdalenae (André) Baker ! J. Utley 1977
Large patch, only two with inflorescences. Leaves mostly upright. Inflorescence bright red, peduncle ca. 1/2 m.

MO, , . 7600 Heliconia vaginalis Benth. det. A. Gentry
Herbs ca. 2 m. tall. Bracts, rachis and peduncle red. Flowers and fruit yellow, green at tip. Fruit turning bright blue.

I went swimming in the refreshingly cool clear water of the pool above the big boulders. ~~Damn~~ Damn fine swimming pool.

Oct. 26, 1973

Canal Zone, Panamá
17PPA 370-1/135-7

7601-7607 Along Río Mendosa, ~~[illegible]~~ on upstream side of Pipeline Road bridge, 8 km. NW of Gamboa. alt. ~~[illegible]~~ 95 m. Tropical Premontane wet forest.

MO, , , . 7601 Erythrina costaricensis Micheli ♀ ! B.A. Krukoff 1974
Leafless shrub 5 m. tall. Flowers bright orange red. Old fruit hanging, without seeds.

MO. 7602 Eugenia zetekiana Standl. (= Aulomyrcia z. (Standl.) Amsh.)
det. Liesner, 1983 Slender shrub 2 m. tall. Fruit green.

MO, 9. 7603 ~~Euphorb.~~? Rinorea cf. squamata Blake det. Morillo, 1974
Small tree ~~[illegible]~~ 7 m. tall, 15 cm. dbh. Fruit green.

MO, . 7604 Bromel. Guzmania lingulata var. minor (Mez.) Sm. & Pitt
4 m. from ground on # 7603. Bracts light green with reddish margins. det. J. Utley 1977

MO, MAD, 14. 7605 Jovomitopsis nicaraguensis Pl. & Tr.
MADw 32462 ⓦ Shrub 3 m. tall. Inner bark and heartwood reddish, sapwood white. Fruit green with 5 black spots at tip, calyx red, with scant sticky orange sap. det. W. D'Arcy, 1980

MO, 13. 7606 Melastome. Miconia donaeana Naud. det. R.L. 1974
Shrub 4 m. tall. Fruit green, a few turning purple.

MO, MAD, 18. 7607 Rub. Gonzalagunia rudis St. det. J.D. 1974
MADw 32463 ⓦ Slender shrub 2 m. tall. Inflorescence hanging. Corolla white, fruit white spongy juicy, to 8 mm. ~~long~~ diam, 5 mm. ~~diam~~ long, with faint wintergreen flavor.

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Canal Zone, Panamá
17PPA 370/~~4~~ 135

MO, 16. 7608 Ischaemum rugosum Salisb. ! G.D. 1974
Open roadside, Pipeline Road at Río Mendosa Bridge, 8 km. NW of Gamboa, alt. 100 m.

After wading upstream for ½ km, swimming and then back the ½ km., I felt like a muskrat - a satisfied dripping clean muskrat.

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ca. 17PPA 369/126
MO, 13. 7609 Ficus paraensis (Mig.) Mig. det. C.C. Berg 1976
Tree 6 m. tall, heavily infested by biting ants.
Figs 1 cm. diam. ~~[illegible]~~ green with irregular red stripes, tip pink.
Tropical moist forest along Pipeline road, 7 km. NW of Gamboa. alt. 75 m.

Oct. 27, 1973

Canal Zone, Panamá

17PPA 485/021

MO, MAD, 3. 7610 Bombacaceae. Pseudobombax septenatum

MADw 32464 ⓦ Tree 1 m. diam, buttressed at base, wood soft, bark 5 cm. thick with smooth green stripes. Cultivated, Summit Garden. alt. 80 m. Sterile.

MO, . 7611 Palm.

Massive palm 0.5 m. dbh., 15 m. tall. Collections from material fallen to ground. Cultivated, Summit Garden. alt. 80 m.

17PPA 498-503/022-030

7612-7626 Roadside and edge of secondary tropical moist forest along Madden Road, 1-2 km. N of junction with Gaillard Hwy. alt. 80-110 m.

MO, 7. 7612 Malpigh. Banisteriopsis muricata (Cav.) Cuatrec. Vine to 8 m. at edge of forest. Flowers odorless, petals pink (one glossy yellow at base), fading nearly white. det. T. Croat, 1975

MO, , . 7613 Legum. Indigofera suffruticosa Mill. det. J. Dwyer 1 m. tall herb on roadside. Flowers dull red.

MO, 8. 7614 Rub. Chomelia spinosa Jacq. det. J. Dwyer 1974 Shrub 4 m. tall. Fruit green.

MO, . 7615 Apoc. Thevetia ahouai (L.) DC. det. A.G. 1974 Slender shrub 2 m. tall. Corolla yellow.

MO, , . 7616 Xanthoxylum setulosum P. Wilson det. T.C. 1974 Small tree 8 m. tall. Fruit brown, seeds dispersed.

Oct. 27, 1973

Canal Zone, Panamá

17PPA 498-503/022-030

MO, MAD, 6. 7617 ? Colubrina heteroneura (Griseb.) Standl. det. M.C. Johnston 1974

MADw 32465 (w) Shrub 3 m. tall. Petals greenish white, disc greenish yellow.

MO, 5. 7618 Hyptis pulegioides Pohl det. R.L. 1974

Corolla white with purple spots.

MO, 6. 7619 Euphorb. Croton trinitatis Millsp. det. R.L. 1974

MO, 6. 7620 Paspalum centrale Chase det. G.D. 1974

Mowed roadside.

MO 7621 moss.

Clay bank.

MO, 10. 7622 ? Miconia borealis Gleason ? det. R.L. 1974

Shrub 4 m. tall.

MO, , . 7623 Wulffia baccata (L.f.) Ktze ! R.L. 1976

Scandent to 2 m. Tips of bracts orange, fruit dark green, seed black.

MO, 4. 7624 ? Rhynchospora Scleria bracteata Cav. det. G. Davidse, 1975

MO, MAD, 14. 7625 Hirtella racemosa Lam.

MADw 32466 (w) Shrub 4 m. tall. Petals pink, stamens light purple. det. R. Liesner, 1975.

MO, 5. 7626 Bauhinia hymenaefolia Triana ex Hemsl. det Wunderlin

Vine hanging off tree, to at least 10 m. Fruit green, immature one splitting & curling during drying.

Oct. 28, 1973

Prov. Panamá, Panamá
17PPA 519/122

MO, 13. 7627 Pithecolobium longifolium (H.+B.) Standley ! R.L. 1974
Tree 12 m. tall along Río Chilibre at Madden Road bridge. Abundantly flowering. Flowers on branches up to 15 cm. diam. Filaments and style pale purple distally, white at base. alt. 40 m.

MO 7628 moss.
On twig of ~~7627~~ Pithecolobium longifolium (#7627)

17PPA 524/171

MO, 4. 7629 ? Byttneria aculeata Jacq. ! R.L.
Vny, to 3 m. in roadside thicket, junction of Madden Road and Boy Scout Road, 1 Km. S of Madden Dam. alt. 90 m. Calyx pale green, disc and "anthers" yellow.

Prov. Colón, Panamá
17PPA 535/325

MO, . 7630 Dalechampia dioscoreifolia Poepp. + Endl. det. R.L. 1974
Vine to 1.5 m. Bracts white with red veins. Brushy pasture along Quebrada Bonita. alt. 90 m. 13 Km. NE of Buena Vista. 2 Km. NW of Salamanca.

Oct. 28, 1973

Prov. Colón, Panamá
17PPA 533-4/327-332

7631-7648 Brushy pasture slope with ~~some~~ ~~acanth~~ some cultivated fruit trees and remnants of tropical moist forest. ~~Elev.~~ Along Quebrada Bonita, 13 Km. NE of Buena Vista. alt. 100-170 m. 3 Km. NW of Salamanca.

MO, 6. 7631 Legum. Machaerium microphyllum (G. Meyer) standl. Weak stemmed shrub 3 m. tall along quebrada. Petals purple, standard green at base within.

MO, 11. 7632 Mucuna holtonii (Kuntze) Mold. det. W.G. D'Arcy, 1980 Vine to 8 m. covering tree. Wood soft, all parts of plant turning black (or dark purple) on being cut or bruised. Fruits and flowers hanging on ~~fam~~ 3-3.5 m. long, ~~3~~ 3 mm. diam. purple peduncles. One globose "bud" 5 cm. diam. with palegreenish bracts subtending 3 flowers. Fruit greenish ~~brown~~ brown, up to 5 per peduncle, usually fewer.

" Mucuna sp.? - Sp. nov.? same species as Nee 9075. Note glabrous leaves" Ron Liesner 1974

MO, 4. 7633 fern. Cyclopeltis semicordata (Sw.) J. Sm. det. D.L. 1977

MO, . 7634 Ischnosiphon pruinosus (Reg.) Peters. det. H. Kennedy 1974 Herb 1.5 m. tall. Flowers purple and yellow.

MO, MAD, , , . 7635 Melastome. Ossaea quinquinervia (Mill.) Cogn. det. ~~H. Kennedy 1974~~ R.L. 1979

MADw 32467 (w) Shrub 1 m. tall. Petals almost white. Fruit dark pink, turning dark blue.

MO, 3. 7636 Jectaria incisa var. pilosa (Fée) Morton D.L. 1977

MO, 4. 7637 Acanth.? Mendoncia retusa Turrill ! L.H. Durkee 1977 herbaceous vine.

MO, 8. 7638 fern. Lygodium radiatum Prantl Vine. ! Lellinger 1977

Oct. 28, 1973

Prov. Colón, Panamá

17 PPA 533-4/327-332

MO, 5. 7639 ~~Polypodium~~ Niphidium crassifolium (L.) Lellinger
Epiphyte at 2 m. on palm trunk. ~~matted~~
Attached by matted brown root mass. This species is slow in drying, usually turning brown in the process. det. Lellinger, 1977

MO, , . 7640 Theobroma cacao L. det. A. Gentry, 1975
Spreading shrub 6 m. tall, undoubtedly cultivated. Fruit from trunk, 17 x 8 cm., greenish white with purple mottling.

MO, , . 7641 Melastom. Clidemia octona (Bonpl.) L. Wms. det. R.L. 1974
Shrub 2 m. tall. Petals white.

MO. 7642 Begonia filipes Benth. det. K. Burt-Utley, 1976.
Wattery herb on fallen log. Stem pink.

MO, , . 7643 Ludwigia octovalis (Jacq.) Raven det. P. Raven
Petals yellow, readily falling.

MO, MAD, 12. 7644 Hyptis verticillata Jacq. det. R.L. 1974.
MADw 32468 (w) Rank smelling shrub 2 m. tall. Flowers white.

MO, , . 7645 Myrt. Syzygium jambos (L.) Alston det. R.L.
Tree 12 m. tall, 20 cm. dbh. Cult.?

MO, 10. 7646 Fern. Dennstaedtia cicutaria (Sw.) Moore det. Lellinger, 1977.
Arching fronds ca. 2.5 m. long arising singly from underground rhizome.

MO, 5. 7647 Cissus pseudosicyoides Croat det. T. Croat, 1975.
Vine. Flowers yellowish green.

MO, 3. 7648 Jheretia ahouai (L.) DC. det. A.G. 1974
Slender shrub 2 m. tall. Corolla light yellow, fruit bright red. Sap milky.

Oct. 28, 1973

Prov. Colón, Panamá

ca. 17PPA 512/299

MO, 7. 7649 Bursera simaruba (L.) Sarg. det. T.C. 1974
Living fence post, 4 m. tall. Bark smooth, brown. with resinous odor. alt. 90 m. 10 Km. NE of Buena Vista.

17PPA 495/281

7650-7651 Along Quebrada Sardinilla at bridge, 7 km. NE of Buena Vista. alt. 55 m.

MO, 18. 7650 Lithecolobium longifolium (H.&B.) Standl. ! R.L. 1974
Tree 60 cm. dbh., 10 m. tall, others twice as large seen, this is a common riverbank tree now in full bloom. Flowers lightly fragrant. Stamens white at base, light purple distally. Young foliage bronze.

MO, 8. 7651 Solanum (§ Solanum) ? americanum Mill. det. D'Arcy 1974
Herb 1 m. tall. Corolla white, ripe berries dark purple, almost black. Brushy pasture at edge of ~~the~~ quebrada.

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ca. 17PPA 469/250

7652-7653 Roadside, 2 km. N of Transístmica and Cement Plant, 3 Km. E of Buena Vista. alt. 140 m.

MO, , , . 7652 Cecropia peltata L. det. T. Croat & J. Conrad 1974
Small tree 10 m. tall, 20 cm. dbh. Brushy area. Infested by small brown biting ants.

MO, 15. 7653 Ischaemum rugosum Salisb. ! G.D. 1974
Grassy roadside.

Oct. 28, 1973

Prov. Colón, Panamá

cn. 17PPA 467 f243 ! S. Mori 1974

MO, MAD, • 7654 Justavia grandibracteata Croat & Mori

MADw 32469 @ several unbranched shrubs to 3 m. tall, probably of sprout origin. Very disturbed brushy cut over area, ~~rocky~~ stony (limestone) along road 1 km. N of Transístmica and Cement Plant, ~~alt~~ 3 km. E of Buena Vista. alt. 115 m. Upper leaves at 45° angle, middle ones spreading, lower ones pointing downwards, much more regularly arranged, lighter green, not twisted and not conspicuously corrugated as in J. superba which also appears here ~~and app~~ much more commonly.

I regret not being too precise about the locations of #'s ~~7655~~ 7649-7654, but the thundershower which drenched me as I was coming down the hill at my main collecting spot was slowly moving south. As I would drive, I ~~was~~ would get ahead of it, but no sooner was I out of the car than it would catch up and send me scurrying back to the jeep which by now was getting full and kept me busy pressing plants ~~until~~ from 2:00 P.M. to 10:P.M. with a few things left over to work on Monday morning.

Oct. 29, 1973

Canal Zone, Panamá

17PPA 361-3/147-8

7655-7680, 7682, 7691-7692 Premontane wet forest area along Pipeline Road, 9 km. NW of Bamboa. alt. 150 m.

MO, , . 7655 Costus laevis R+P. det. P.J.M. Maas 1978
Stems ca. 4 m. long. Edge of forest. Labellum with dark red stripes and a yellow stripe in throat.

MO, 5. 7656 Gram. Laciasis procerrima (Hack.) Hitchc. det. G.D. 1979
1.5 m. tall. Edge of forest.

MO, MAD, . 7657 Ardisia bartlettii Lundell det. Lundell, 1979
MADw 32470 (w) Shrub 2 m. tall. Fruit light purple.

MO, , . 7658 Schizaea elegans (Vahl) Sw. det. Lellinger 1977

MO, , . 7659 fern. Maxonia apiifolia var. dualis (Donn.Sm.) C.Chr.
Climbing to 1 m. on slender palm, others seen climbing higher. Fronds dimorphic. det. Lellinger 1977

MO. 7660 Palm. Synechanthus warscewiczianus H. Wendl.
MADw 32471 (w) 3 m. tall. Inflorescence from below the leaves. Fruit now green, soft and juicy, 1.5 x 0.6 cm. det. Henderson + Ferreira, 2000

MO, . 7661 fern. Dicranoglossum panamense (C.Chr.) Gomez
Epiphyte at 2 m. from ground on a vine. det. Lellinger 1977.

MO, . 7662 Trichomanes diversifrons (Bory) Mott det. M. Correa, 1982

MO, 6. 7663 fern. Cyathea petiolata (Hook.) Tryon
2 m. tall. Stem ca. 25 cm. tall. Petiole 1 m. long, blade ca. 2 m. long. det. Lellinger 1977.

~~7664 fern~~

7664-7669, 7691-7692 Edge of forest and grassy pipeline clearing.

Oct. 29, 1973

Canal Zone, Panamá

17PPA 361-3/147-8

MO, 4. 7664 fern. Dictyoxiphium panamense Hook.
leaves erect. ! Lellinger 1977.

MO, , . 7665 fern. Adiantum petiolatum Desv. det. Lellinger 1977.

MO, 5. 7666 fern. Thelypteris hispidula (Dcne) Reed. var. hispidula " " 1977.

MO, 7 S. horizontalis (Presl) Spring A.C.Sm. 1985 7667 Selaginella serrata Spring det. Lellinger, 1983.

MO, 3. 7668 Adiantum obliquum Willd. det. Lellinger 1977.

MO, 7. 7669 Gram. Ichnanthus tenuis (Presl) Hitchc. & Chase 1974 det. G.D.

MO, . 7691 Adiantum humile Kunze D.L. 1977.

MO, , , , . 7692 fern. Blechnum occidentale L. f. var. occidentale
D.L. 1977.

MO, 8. 7670 Adiantum latifolium Lam. D.L. 1977.
Grassy pipeline clearing.

MO, 7. 7671 Scroph. Alectra aspera (Cham. & Schlecht.) L. Wms.
Grassy pipeline clearing. Flowers yellow.
Leaves easily fragmenting even when fresh.
det. R.L. 1980

MO, 7. 7672 Morac. cf. Perebea xanthochyma Karst. J. Conrad 1974
Tree 15 m. tall, 30 cm. dbh.

MO, . 7673 Malv. Pavonia dasypetala Turcz. det. R.L. 1974
Shrub to 3 m. tall, edge of forest.

MO, 8. 7674 fern. Metaxya rostrata (HBK.) Presl D.L. 1977.
Rhizome very hard. Petiole to ca. 1 m. long, blade to ca. 1 m.

MO, NY, . 7675 Maranthes corymbosa Blume m. panamensis (Standl.) Prance & White
Large tree 45 cm. dbh. Fruit green.

MO, 6. 7676 fern. Pityrogramma calomelanos (L.) Link D.L. 1977
Roadside. Young fronds silvery beneath.

MO, 7. 7677 fern. Thelypteris falcata (Liebm.) Tryon D.L. 1977
Edge of forest. Petiole to 1.1 m., blade to 1.2 m.

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Canal Zone, Panamá

17PPA 361-3/147-8

MO, 10. 7678 Moraceae. Perebea xanthochyma Karst.
Tree 14 m. tall, 20 cm. dbh. det. J. Conrad, 1975

MO, , . 7679 Renealmia cernua (R. & S.) Macbr. ! P.J.M. Maas 1978
Herbs at edge of forest, 3 m. tall. Bracts and calyx orange. Fruit with thin dark blue wall. Seeds brown, surrounded by stringy orange pulp similar to that of R. exaltata but drier.

MO. 7680 Erythrina costaricensis M. Micheli det. B.A. Krukoff 1979
Leafless shrub 4 m. tall. Flowers bright red orange, fruit dull red.

MO, , , . 7682 fern. Dictyoxiphium panamense Hook. ! D.L. 1977.
Edge of forest. Fronds dimorphic, fertile ones erect, sterile ones spreading.

17PPA 367/144

MO, MAD, , . 7681 Lysianthus skinneri (Hemsl.) Kuntze
MADw 32472 ⓦ Slender shrub 3 m. tall. Flowers odorless, corolla yellow (10/9), center of lobes and top of tube greenish. Roadside along Pipeline Road, 9 km. NW of Gamboa. alt. 140 m.
det. R. Wilbur, 1993

Oct. 30, 1973 7691-7692 see p. 187

Canal Zone, Panamá
17PPA 456/049

7683-7690 Along Gaillard Hwy., 4 km. SE of Gamboa. alt. 70 m.

MO, , , . 7683 Bignon. Phryganocydia corymbosa (Vent.) Bur. ex K. Schum. det. A.G. 1974
Vine to 5 m. in thicket. Flowers held horizontally, corolla purple with darker purple area at base of two upper lobes. Throat white with purple lines. Flowers nearly odorless.

MO, , , . 7684 Polygonaceae. Antigonon leptopus Hook. & Arn. det. R.L. 1974
Vine to 2.5 m. in thicket near site of burned house. Seems to be an escape. Flowers deep pink.

7685-7690 Clay and ashes of burned-down house.

MO, 3. 7685 Erechtites hieracifolia var. cacalioides (Spreng.) Griseb.

MO, 5. 7686 Pityogramma calomelanos (L.) Link det. T.M. Barkley 1976.
Fronds silvery beneath. D.L. 1977.

MO, 5. 7687 Cyperac. Rhynchospora radicans (S+C) Pfeiff.
Bracts green.

MO, 6. 7688 Stachytarpheta jamaicensis (L.) Vahl
Corolla dark blue with white throat, readily falling. det. R. Liesner, 1975

MO, 3. 7689 Pilea microphylla (L.) Liebm. det. R.L. 1974

MO, 8. 7690 Peperomia pellucida (L.) HBK.
Watery herb. R.L. 1976.

My collections between Gamboa & Summit Garden seem to be the result of running out of gas.

Oct. 31, 1973

Canal Zone, Panamá
17PPV 596/907

7693-7694 Near Gorgas Hospital, ~~Balboa~~ Ancón. alt. 40 m.

MO, SCZ. 7693 Delonix regia (Bojer) Raf.
Cult. tree. Pods from ground.

MO 7694 moss. Sematophyllum
Lawn.

Prov. Panamá, Panamá
17PPV 455-7/848-852

7695-7712 Pasture along old road to Bique. 5 km. SW of Arraiján. alt. 20-40 m.

MO, , , . 7695 Lab. Hyptis suaveolens (L.) Poit. det. R.L. 1974
1 m. tall, aromatic. Corolla blue.

MO, , , . 7696 Malpigh. Banisteriopsis muricata (Cav.) Cuatrec.
Vine to 4 m. on shrubs. Petals pink, fading to white, one yellow at base. det. T. Croat, 1975

MO, 4. 7697 Limnocharis flava (L.) Buch.
Low muddy spot. Flowers yellow.

MO, , . 7698 Paspalum densum Poir. det. G.D. 1974
Low area. Inflorescence reddish.

MO, , , . 7699 Philodendron hederaceum (Jacq.) Schott. ? ! T. Croat 1975
Vine to 10 m. in tree. Collection from a long free-hanging stem. Petiole and peduncle green with darker green lines. Spathe green, purple at base within, ~~[illegible]~~ ♂ part of spadix rotting, putrid.

Oct. 31, 1973

Prov. Panamá, Panamá
17PPV 455-7/848-52

MO, 8. 7700 Piper tuberculatum Jacq. det. J. Conrad 1974
Shrub 5 m. tall, 10 cm. diam. at base.
Spikes erect.

MO, 4. 7701 Verb.? Cornutia grandifolia (Schtdl. + Cham.) Schau.
Shrub 3 m. tall, strongly aromatic. det. R. Liesner 1974
Corolla blue with pale yellow at base of lip.

MO, 6. 7702 * Guazuma ulmifolia Lam.
Tree 10 m. tall, 45 cm. dbh. det. J. Kuijt 1974

MO, 15. 7703 Loranth. Phoradendron quadrangulare (HBK.) Krug + Urban
Common shrubby parasite on # 7702.
Largest fruit seen 3 mm. diam., yellow, sticky within. Whole plant, except yellowish green inflorescences, about the same color - dark green.

MO, 8. 7704 Sterculia apetala
Large buttressed tree ½ m. diam.
Fruit green.

MO, , , . 7705 Inga punctata Willd. det. R. Liesner 1974
Shrub 5 m. tall at edge of forest. Filaments white.

MO, , , , , 7706 Solanum subinerme Jacq. ! D'Arcy 1974
, , , , . Abundant shrub to 2.5 m. tall. Flowers blue-purple, with heavy sweet odor.
Fruit green.

MO, , . 7707 Legume Desmanthus virgatus (L.) Willd. s.l.
1 m. tall. Leaves sensitive. R.L. 1978

MO, 5. 7708 Scleria bracteata Cav.
Scandent to 2 m.

Oct. 31, 1973

Prov. Panamá, Panamá

17PPV 455-7/848-52

MO, 4. 7709 *Bixa orellana* L.
Shrub 4 m. tall, a living fencepost. Fruits and undersides of leaves rusty green.

MO, 7. 7710 *Setaria paniculifera* (Steud.) Fourn.
To 3 m. tall, roadside at edge of forest. ! G.D. 1974

MO. 7711 ~~*S*~~ *Ischaemum rugosum* Salisb. ! G.D. 1974
Low spot in pasture.

~~7712 *Lygodium venu*~~

MO, 9. 7712 *Lygodium venustum* Sw. ! D.L. 1977
Very common vine.

Nov. 1, 1973

Canal Zone, Panamá
17PPA 488/020

7713-7714 Cultivated in Summit Garden. alt. 80 m.

MO, , , , . 7713 Lecythis minor Jacq. det. S. Mori 1974
Small flat-topped tree 4 m. tall, 25 cm. diam.
Inflorescence infested by two species of harmless ants, the larger of which seems to be probing beneath the edges of the ~~bud~~ petals in bud ~~calyx lobes~~ and bracts at base of the green buds. n=17 counted R. Kowal, 1975

MO, , , . 7714 Lecythis minor Jacq. det. S. Mori 1974
Small tree 10 m. tall, 30 cm. diam., branching at 0.75 m. Bark hard, deeply fissured. Flowers ± odorless. Petals white with greenish yellow on middle outside. Hood white with clear yellow staminodia. Fertile anthers yellow-orange.

I pickled some anthers of these two Lecythis and will send them to Scott Mori for counting the chromosomes.

Nov. 1, 1973

Canal Zone, Panama

17PPA 371-2/ ~~14~~ 139-143

7715-7735 Along Rio Mendosa and small tributary, ½-1 km. upstream from Pipeline Road bridge, 8 km. NW of Gamboa. alt. 100 m.
Premontane wet forest

MO. 7715 Heisteria costaricensis Donn. Sm. det. J. Humbles 1974
Slender shrub 1.5 m. tall in Aechmea magdalenae patch on rocky ledge.
Calyx red, fruit green.

MO, 10. 7716 Olmedia aspera R.+P. ! C.C. Berg 1976
♂ Shrub 3 m. tall arching over stream.

MO, , , , . 7717 ? ~~Polypodium~~ Tectaria plantaginea (Jacq.) Maxon.
Rocky bank. D.L. 1977.

MO, 13. 7718 Hymenophyll. Trichomanes hymenoides Hedw. D.L. 1977
Completely covering a palm trunk to 10 m.

MO, 8. 7719 fern. Lastreopsis chontalensis (Fourn.) Lell.
Rocky bank. D.L. 1977.

MO, , , , . 7720 fern. Bolbitis portoricensis (Spreng.) Hennipm.
On boulder. Fronds dimorphic. ~~Det. 1977~~

MO, . 7721 ? Crossopetalum parviflorum (Hemsl.) Lundell
Shrub 3 m. tall. Fruit green. det. Lundell, 1978

MO, , , , . 7722 fern. Asplenium laetum Sw. D.L. 1977
Rocky bank.

MO. 7723 fern.
Rotten log.

MO, 8. 7724 fern. Asplenium laetum Sw. D.L. 1977.
On boulder.

MO, , , , . 7725 fern. Dennstaedtia obtusifolia (Willd.) Moore
D.L. 1977.

Nov. 1, 1973

Canal Zone, Panama
17PPA 371-2/139-143

MO, 5. 7726 Rub. Psychotria dispersa St. det. J. Dwyer 1974
Shrub 1 m. tall. Fruit blue, spongy juicy.

MO, , , . 7727 Gesner. Besleria laxiflora Benth.
Shrub 2 m. tall. Calyx yellow orange, corolla orange. det. L. Skog, 1977.

MO. 7728 fern. Diplazium grandifolium Sw.
Rocky bank. D. L. 1977.

MO 7729 moss. Lepidopilum polytrichoides (Hedw.) Brid.
On ~~2~~ twigs 2 m. from ground.

MO, 4. 7730 Triolena hirsuta (Benth.) Triana det. R. L. 1974
Forest herb. Petals white.

MO, 12. 7731 Menisperm. Curarea toxicofera (Wedd.) Barneby & Krukoff
Vine to 5 m. on shrub. Fruit green to yellowish, mostly on the lower leafless part of the stem. det. B. Krukoff, 1974.

MO. 7732 Legume?
Fruits fallen to ground. Usually 3 seeds per fruit.

MO, , . 7733 Adiantum macrophyllum Sw.
Rocky bank. D. L. 1977.

MO, . 7734 Rinorea lindeniana (Tul.) Kuntze var. fernandesiana
Shrub 2 m. tall ~~[illegible]~~ leaning over stream. Flowers pale orange. det. Hekking, 1982

MO, , , . 7735 (Carludovica) Dicranopygium crinitum Harl.
Very common along rocky shores and on boulders along stream. Cut caudex exuding a clear sticky gelatinous sap. Flowering inflorescence white.
det. B. Hammel, 1985

Nov. 1, 1973

Canal Zone, Panamá
17PPA 369-71/135-7

7736-7745 Along Rio Mendosa near Pipeline Road bridge, 8 km. NW of Gamboa. alt. 95 m.

MO, , . 7736 Erythrina costaricensis M. Michels det. B. A. Krukoff. 1974
Leafless shrub 6 m. tall. Fruit hanging, dull red.

MO, 5. 7737 Piper peracuminatum C. DC. det. R. Callejas, 2000
Shrub 6 m. tall with proproots at base.
Pleasantly aromatic. Piper sp. nov., nee 6586, et. col. al.

MO, . 7738 ~~Annon.~~ Unonopsis pittieri Safford s.l. det. R.L.
Shrub 3 m. tall leaning over stream.
Fruit yellowish green, stipes red.

MO, 7. 7739 Acacia melanoceras Beurl. ? ! R.L. 1974
Shrub 8 m. tall, 5 cm. diam. with thorns throughout. Young thorns red. Infested by aggressive ants with a painful but short lasting sting. Fruit green.

MO, 11. 7740 Myrsinaceae Ardisia fruticosa Lundell, sp. nov. type.
Shrub 3 m. tall, ~~mostly~~ with abundant fruit and a few buds. Fruit to 9 mm. diam., turning from green to light purple to dark purple.

MO, . 7741 ~~Cappar.~~ Swartzia simplex (Sw.) Spreng. ! R.L. 1974
Small shrub, fruit orange.

MO. 7742 Heliconia pogonantha Cuf.
Giant herb 6 m. tall. Inflorescence pendant, deep red, bracts becoming spiral. Leaf blade 2.6 m. long. det. A. Ge[illegible]

Nov. 1, 1973

Canal Zone, Panamá
17PPA 369-71/135-7

1974

MO, 9. 7743 ~~Z~~ Protium costaricense (Rose) Engler det. T.C.
Small tree 8 m. tall, 10 cm. dbh., strong resinous odor. ~~Fruit~~ Fruit green, splitting, red within.

MO, 24. 7744 fern. Nephelea mexicana (Schlecht. & Cham.) Tryon
Tree fern, trunk 3 m. tall, 10 cm. diam., with 5 expanded leaves. Petiole 70 cm., blade 2.5 m. long, basal pinnae 40 cm. long, longest pinnae at about middle of blade, ca. 75 cm. long. D.L. 1977.

MO, , , , . 7745 Aroid. Syngonium podophyllum ~~macrophyllum~~ Schott, det. Croat in litt., 1982.
Vine attached to tree along road, leaves clustered at tip of stem at 3 m., stem dying away at 1 m. from ground. Fascicle of 5 inflorescences ~~at~~ in a leaf axil. Spathe green. Seeds pale pink, in a sweet smelling white pulp. Sap milky.
det. T. Croat, 197~~8~~.

Nov. 2, 1973

Canal Zone, Panamá
17PPA 424/078

7746-7747 At 1.5 m. from ground on cult. Roystonea regia at Dredging Division, Gamboa. alt. 30 m.

US. 7746 lichen Dirinaria
Common.

US. 7747 lichen. Lecanora

I would have gotten more lichens off these royal palms but they are hard to collect from and I didn't want to leave big conspicuous gashes in their trunks; it would have been obvious who in the Dredging Division would be collecting plants!

17PPA 422/078

7748-7757 On slender cultivated palm, 1-2 m. from ground, Dredging Division, Gamboa. alt. 30 m.

US. 7748 lichen Graphid.
US, " 7749 lichen Dirinaria
US. 7750 ~~Graphid~~ lichen,
US. 7751 lichen Pyrenocarp.
US, " " " 7752 lichen sterile crust?
US. 7753 Graphid.
US, " " 7754 Graphid.
US. 7755 lichen Pyrenocarp.
US. 7756 lichen
US. 7757 Graphid.

Nov. 3, 1973

Canal Zone, Panamá

17PPA 420-2/085-088

7758-7761 Secondary tropical moist forest along road to Cerro Pelado radar station. 1/2 km. NW of Gamboa. alt. 75-150 m.

MO, 16. 7758 Trigoniaceae Trigonia floribunda Oerst. det. R.L. 1974
Woody vine to 4 m. Fruit green to dull reddish.

MO, 7. 7759 Doliocarpus major Gmel. det. R.L. 1974.
Woody vine to 4 m. In full fruit, fruit bright red, seeds brown in a juicy white aril.

MO, . 7760 Philodendron hederaceum (Jacq.) Schott. det. T. Croat, 1975
Vine climbing to 5 m. in shrub with free-hanging stems nearly reaching the ground. Inflorescences from the top of the stem, erect. Spathe green, purple at base within. Male part of spadix rotting, putrid. Petiole and peduncle green with darker green striations. A very common vine on the lower part of Cerro Pelado (present at summit at 220 m. but there less common) and easily recognized by the light, almost yellowish, green leaves.

MO, , . 7761 Hyeronima laxiflora (Tul.) Muell.-Arg.
Tall tree 30 cm. dbh with soft flaky brown bark. ♂ flowers green. ! R.L. 1976

17PPA 423/089

7762-7769 Secondary tropical moist forest at top of Cerro Pelado, 1 km. N of Gamboa. alt. 200-220 m.

200 Nov. 3, 1973

Canal Zone, Panamá

17PPA 423/089 det. A.G. 1974

MO, , . 7762 Apoc. Odontadenia puncticulosa (L.Rich.) Pulle.
Large woody vine. Fruits old.

MO, , , . 7763 Elaphoglossum
Epiphyte on large leaning tree. Fronds pendant.

MO, MAD, 23. 7764 Mosquitoxylon jamaicense Krug & Urb. ! T. Croat 1974
MADw 32473 (w) Tree 15 m. tall, 15 cm. dbh. Inner bark red, sapwood white, soon turning very pale red, heartwood yellow. Fruit shiny pink with resinous odor.

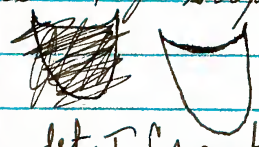
MO, 5. 7765 Pera arborea Mutis ! R.L. 1974
Small tree. Fruits green, smooth, globose.

MO, . 7766 Lasiacis procerrima (Hack.) Hitchc. ! G.D. 1974
~~At clearing at top. Spk~~ At radar clearing at top. Spikelets turning black.

MO, , . 7767 Pteridium aquilinum (L.) Kuhn var. caudatum (L.) Sadeb.
Radar clearing at top. Lellinger 1977.

MO, 8. 7768 Scleria bracteata Cav.
Radar clearing at top. Scandent.

MO, , . 7769 Arac. Philodendron fragrantissimum (Hook.) Kunth
Vine climbing up trunks of trees and shrubs. Stem usually 1-3 m. long, dying away below, large leaves clustered at top. Sap quickly turning orange.



cross section of petiole x1

det. T. Croat, 1975
Inflorescence nearly gone, fruit and axis of spadix red.

Nov. 4, 1973

Canal Zone, Panamá
17 PPA 518-9/185-6

7770-7775 ~~[illegible]~~ Edge of secondary tropical moist forest at Madden Dam. alt. 80 m.

mo, , , . 7770 Cassia nicaraguensis (Benth.) B. & R. det. R. Liesner
This tree + a couple of others next to it coll. in fruit sub #8908 on Dec. 20, 1973.
Shrub 5 m. tall. Petals bright yellow.

mo, 8. 7771 Coccoloba novagranatensis Lindau det. R. L. 1974
Large shrub 8 m. tall. Fruit turning from green to light purple to dark ~~purple~~ purple, astringent when ripe.

mo, 7. 7772 Gram. Oplismenus burmanni (Retz.) Beauv. det. G. D. 1974
Closely clipped roadside.

mo, 4. 7773 Begonia guaduensis HBK. K. Burt-Utley 1976.
Herb 1.5 m. tall on rocky roadside. Petals white with red tips, stamens yellow.

mo, 7. 7774 Legum. Calopogonium caeruleum Benth. det. R. L. 1974
Vine to 2 m. in low shrubs. Flowers with faint fragrance, petals blue-purple with greenish area at base of standard.

mo, 7. 7775 Bursera simaruba (L.) Sarg. det. T. C. 1974.
Tree 40 cm. dbh with characteristic green trunk and branches with thin peeling papery brown bark. Fruit green. Resinous odor. ~~[illegible]~~

Nov. 4, 1973

Prov. Colón, Panamá
17PPA 477-9/262-5
7776-7790 Disturbed and pastured remnants of tropical moist forest along tributary of Quebrada Ancha. 4 km. E of Buena Vista, 3 km. N of Cement Plant. alt. 80 m.

MO, 3. 7776 Erythrina costaricensis M. Micheli det. B.A. Krukoff '74
Leafless shrub 4 m. tall. Flowers bright red. Fruit dull red, hanging.

MO, 10. 7777 Cissus pseudosicyoides Croat det. T. Croat, 1975
Vine to 3 m. Flowering branches held horizontally. Flowers greenish-yellow, fruit green.

MO, 10. 7778 Sorocea affinis Hemsl. ! J.C. 1974
Shrub 3 m. tall, occasional along stream. Fruit green with red tip. Male flowers and rachis red.

MO, 7. 7779 Doliocarpus olivaceous Sprague + Wms. det. R.G. 1974
Course woody vine with tough stems and stiff leaves. Fruit splitting, bright red, many fallen and no seeds seen on ones on vine.

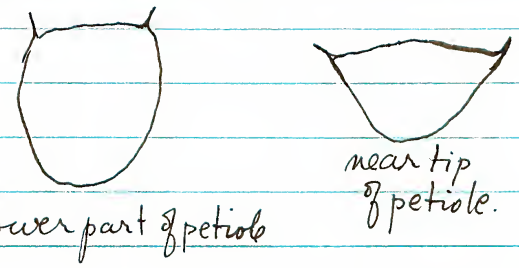
MO. 7780 Anthurium clavigerum Poepp. + Endl.
Large vine at 3 m. on tree trunk, leaves clustered at tip, petioles ca. 1.5 m. long. Spathe purple outside, green tinged with purple within. Spadix pendant, blue-purple. det. T. Croat, 1975

MO, , . 7781 Philodendron pterotum C. Koch + Augustin det. T. Croat 1975
Vine from 2-4 m. on tree, stem dying away below, 14 leaves clustered at tip. Petioles 85 cm. long, blade 90 x 65 cm., spicy fragrant. The wings of the petiole

~~Nov 2~~ Nov. 4, 1973

Prov. Colón, Panamá
17PPA 477-9/262-5

straight on lower part, crisped on the distal ½.



cross sections of petioles, x 1.

Inflorescences clustered in one leaf axil. Spathe green at base and tip, purple around the fruiting area, when ripe, apparently splitting and curling back both toward tip and base, revealing the pale brown fruits.

MO, , , . 7782 Drymonia serrulata (Jacq.) Mart. L.E. Skog 1977.
Vine to 3 m. Corolla lobes purple. Fruit splitting, bright fleshy red-orange.

MO, , , . 7783 Peperomia mameiana C.DC. R.L. 1976.
Epiphytic vinelet ~~with~~ with short stem, at 2 m. on tree trunk. Spikes green, stems red. Leaves thick, stiff and fleshy.

MO, 4. 7784 Mabea occidentalis Benth. det. R.L. 1974
Shrub 4 m. tall. Inflorescent pendant, dull purple.

MO, 5. 7785 Poulsenia armata (Miq.) Standl. ! C.C. Berg 1976
Tree 30 cm. dbh. Twigs with sharp spines, the twigs shrink considerably on drying.
♂ inflorescences mostly dead, ♀ inflorescences first yellowish-green, then green.

Nov. 4, 1973

Prov. Colón, Panamá
17PPA 477-9/262-5

MO, 6. 7786 Hirtella triandra Sw.
Shrub 7 m. tall, 10 cm. dbh. Petals white, style and filaments white at base, purple distally.

MO, NY, S, RSA, F. 7787 Monstera adansonii Schott det. Croat,
Vine at 4 m. on trunk and leaf bases of Scheelea zonensis. Petioles ca. ½ m. long. Largest (nearly ripe) spadix 22 x 3 cm.

MO, 6. 7788 Inga quaternata Poeppig det. R. L. 1974
Small spreading tree 10 m. tall. The branch with flowers and fruits is nearly leafless. Flowers sweetly fragrant, filaments white.

MO, 8. 7789 Hiraea grandifolia Standl. & Wms.
Woody vine high in tree. Wings light green, soft. Type of var. parvifructa Chiatr. & Croat.

MO, , , . 7790 Renealmia exaltata alpinia (Rottb.) Maas
Dense clump of giant herbs 5 m. tall. Inflorescences from base. Fruit first red-pink, then dark purple, when ripe, 2.5 cm. diam., splitting, the dark brown seeds embedded in stringy orange pulp. det. P. J. M. Maas 1978

17PPA 479/265
7791-7799 Gravelly roadside. 4 km. E of Buena Vista, 3 km. N of Cement Plant. Along road to Sardinilla. alt. 85 m.

Nov. 4, 1973

Prov. Colón, Panamá
17PPA 479/265

MO, 7. 7791 Chamaesyce hyssopifolia (L.) Small
Common. R.L. 1976.

MO, 11. 7792 legume. Zornia reticulata Sm.
Dense sprawling herb much branched from base. det. M. Dillon

MO, 4. 7793 legume. Indigofera mucronata Spreng.
Flowers dull purple. det. J. Dwyer

MO. 7794 ~~Panicum~~ Brachiaria fasiculata (Sw.) Parodi det. G.D. 1974

MO. 7795 Paspalum plicatulum Michx " "

MO, 4. 7796 Gram. Bothriochloa bladhii (Retz.) S.T. Blake " "

MO, . 7797 Eclipta alba (L.) Hassk. R.L. 1976.
Rays white.

MO, 4. 7798 Paspalum conjugatum Berg. det. G.D. 1974

MO. 7799 Chamaesyce hirta (L.) Millsp.

17PPA 519/159 alt. 50 m. 2 km. S of Madden Dam.

MO, 7. 7800 Acacia glomerulosa Benth.? R.L. 1975.
Large scandent shrub or vine to 8 m. in tree along Carretera Transístmica near Río Chilibrillo bridge. Flowers white, with heavy sweet fragrance.

17PPA 515/125 alt. 35 m.

MO, 13. 7801 Ficus insipida Willd.
Large, spreading tree, apparently a common riverside ~~[illegible]~~ tree, ~~[illegible]~~ along Carretera Transístmica at Río Chilibre bridge at Chilibre.
Figs ripe, the ground littered with them, to 6.5 cm. diam., flesh white, to 1.1 cm. thick, green

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Prov. Colón, Panamá
17PPA 515/125

with light green spots. Flower parts pink except for light brown seeds and old anthers.

Nov. 5, 1973

Canal Zone, Panamá

17PPA 485/021

7802-7822 On branches of 7610, Summit Gardens, alt. 85 m.

US. 7802 lichen Coccocarpia
US. 7803 lichen Pyrenocarp.
US. 7804 lichen Leptogium
US. 7805 lichen Buellia
US, , . 7806 lichen Pyrenocarp.
US. 7807 Graphid.
US. 7808 lichen Parmelia
US. 7809 lichen Pyxine
US, . 7810 Graphid

US, , , . 7811 lichen
US. 7812 " Dirinaria
US. 7813 "
US. 7814 "
US. 7815 "
US, . 7816 "
US. 7817 "
F. 7818 hepat
F. 7819 hepat
F. 7820 hepat
F. 7821 hepat
F, . 7822 hepat.

17PPA 479/024

MO, 10. 7823 ? Eleocharis
Water filled ditch along RR, 1/2 km. W of Summit Garden. alt. 80 m. Collected again Jan. 18, 1974 sub # 9387

Nov. 6, 1973

Canal Zone, Panamá
17PPV 545-7/956

7824-7840 On branches of large old cultivated Enterolobium cyclocarpum lining side road along Gaillard Hwy., 1 km. N of Miraflores Locks. alt. 30 m.

US. 7824 Ramalina rare.
F. 7825 hepat.
US. 7826 Graphid?
US. 7827 lichen Dirinaria picta
US, , . 7828 Graphid.
US. 7829 Graphid.
US. 7830 lichen Chiodecton
US. 7831 lichen
US, . 7832 lichen
US. 7833 " Leptotrema occultum
US. 7834 " Dirinaria
US. 7835 " Parmelia
US, . 7836 Graphid.
US, . 7837 lichen Lecidiaceae
US, , . 7838 " Dirinaria
US, II. 7839 " (sterile crust ??)
F, . 7840 hepat.

17PPV 598/906

7841-7845 At 0-2 m. from ground on trunk of large cult. Swietenia near Gorgas Hospital, alt. 30 m.

Nov. 6, 1973

Canal Zone, Panamá
17PPV 598/906

US.	7841	lichen Dirinaria
US, , , .	7842	lichen Dirinaria picta
US.	7843	Graphid.
US.	7844	lichen
US, , , .	7845	lichen. Leptotrema

Nov. 7, 1973

Canal Zone, Panamá
ca.
17PPA 398/107

7846-7852 Secondary tropical moist forest along Pipeline Road, 4 Km. NW of Gamboa. alt. 50 m.

MO, , , . 7846 ? Bactris divisicupula Bailey
Slender palms to 7 m. tall with spines to base or rotting off in lowest 1 m. Inflorescence from leaf axils. det. R. Juncosa

MO, , , . 7847 fern. ~~Vittaria~~ Dicranoglossum panamense (C. Chr.) Gomez.
Probably the commonest of the sparse vascular epiphyte flora. D.L. 1977.

MO, . 7848 Marant. Stromanthe jacquinii (R.&S.) Kennedy & Nicholson det. H. Kennedy 1974
Herb 1.5 m. tall. Bracts bright orange.

MO, MAD. 7849 Rubiaceae ? Rinorea squamata Blake det. H. Kiang, 1985
MADw 32474 (w) Shrub 2 m. tall. Fruit green.

MO, MAD, , , . 7850 Quassia amara L. ! T. Croat 1974
MADw 32475 (w) Shrub 7 m. tall, 6 cm. diam.

17PPA 412/ca. 090
MO, , , 7853 Mucuna holtonii (O. Ktze) Moldenke det. R. L. 1974
.
Large vine in canopy of tree along Pipeline road, 2 Km. NW of Gamboa. alt. 50 m. Flowers greenish, stamens and style springing out of keel when fleshy wings disturbed.

7851-7852 on Quassia amara #7850, 1 m. from ground.
US. 7851 lichen Graphid.
US. 7852 lichen Chiodecton

Nov. 8, 1973

Canal Zone, Panamá
17PPA 356-8/153-4

7854-7866 Roadside and edge of premontane wet forest along Pipeline Road, ¼ Km NW of Río Macho bridge, 10 Km. NW of Gamboa. alt. 125 m.

MO, . 7854 Trichospermum mexicanum (DC.) Baill. ! R.L. 1974
Small tree 8 m. tall, 15 cm. dbh. Just beginning to bloom, calyx pink, petals blue.

MO, MAD, 13. 7855 Solanum rugosum Dun. ! D'Arcy 1974.
MADw 32476 @ Small tree 9 m. tall. Foetid. Corolla white, fruit green. Infested by very agressive large ants with ± innocuous bites. Ants tending "aphids."

MO, 6. 7856 Lindackeria laurina
Shrub 4 m. tall. Only a few flowers, fragrant, petals white. Fruit abundant, green, spines soft.

MO, 7. 7857 Piper sanctifelicis Trel. det. J. Conrad, 1975
Shrub 2 m. tall. Spikes erect.

MO, . 7858 Lycianthes guianensis (Dunal) Bitter
Vine to 2 m. in shrubs. Ripe fruit bright orange red. det. W.G. D'Arcy, 1991

MO, 9. 7859 Inga multijuga Benth. det. R.L. 1974
Small tree 10 m. tall. Flowers fragrant, filaments white.

MO, 12. 7860 Lycianthes guianensis (Dunal) Bitter
Vine to 3 m. in shrubs. Fruit bright orange-red, to 2 cm. diam., slightly pyriform.

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Canal Zone, Panamá
17PPA 356-8/153-4

MO, 9. 7861 Solanum asperum ~~Vahl~~ L.C. Rich. ! D'Arcy 1974
Shrub 3 m. tall, foetid. Corolla white, fruit green.

MO, MAD, 41. 7862 Ebenaceae ? Diospyros artanthifolia Mart.
MADw 32477 (w) Small tree 10 m. tall. Fruit dark green with lighter spots. det. F. White, 1978

MO, , . 7863 Philodendron
Vine with 2 m. long stem crawling on log at edge of forest. Stem fibrous, ca. 4.5 cm. thick. Sap watery with some vessels exuding orange sap. Petioles to 1 m. long, round, smooth, 1.5 cm. diam at distal end. Three inflorescences in one leaf axil, green with purple striations at top, purple around ? portion both outside and inside.

MO, MAD, 6. 7864 Cassia fruticosa Mill. det. T. Croat, 1975
MADw 32478 (w) Shrub 4 m. tall. Fruit green, hanging.

MO, MAD, 5. 7865 Cespedesia macrophylla Seem. ! R.L. 1974
MADw 32479 (w) Tree 9 m. tall, 10 cm. dbh. with straight unbranched stem, leafy ~~for the~~ for the top 1.5 m. Fruit greenish yellow.

MO, , , , . 7866 Scroph. Alectra aspera (Schlecht. + Cham.) L. Wms.
Grassy roadside. Flowers yellow.
det. J. Humbles 1974

Nov. 8, 1973

Canal Zone, Panamá
17PPA 359/152

7867-7869 Río Macho bridge along Pipeline Road, 10 km. NW of Gamboa. alt. 115 m.

MO. 7867 Octoblepharum
On wooden bridge.

US, , . 7868 Cladonia
Common where protected from rain by ~~an~~ ~~over~~ a plank. on wooden bridge.

MO, , , . 7869 Aroid. Philodendron panamense K.
Terrestrial at edge of forest. Petioles to 70 cm. long, pink at base. cross sect. ×1

Four inflorescences clustered in a leaf axil. Spathe dark green with much lighter stripes around ♂ portion. Peduncle light green with very light green raised stripes.
det. T. Croat, 1975.

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7870-7952 Premontane wet forest area. El Llano - Carti road, 5 km. N of Pan-Am. Hwy at El Llano. alt. ca. 300 m.

7870-7913 Weedy species of disturbed red clay, brushy roadside and gravel of road. The spp. of the gravel probably brought in with the river gravel.

MO 7870 moss.
forming mats on open red clay.

MO, , , . 7871 Mikania micrantha HBK.
Vine on ground. R.L. 1976.

MO, , , . 7872 Phytolacca
Robust spreading to sprawling herb, to 2 m. tall. Pedicels and rachis purple, tepals pink, fruit green, turning purple.

MO, , , . 7873 Paspalum conjugatum Berg. det. G.D. 1974
Stems rooting at nodes.

MO, , , . 7874 ? ~~Panicum pilos.~~ Paspalum pilosum Sw. " "
Common, forming large low clumps.

MO, , , . 7875 Paspalum decumbens Sw " "
Forming low loose mat.

MO, , . 7876 Pteridium aquilinum (L.) Kuhn var. caudatum (L.) Sadeb. D.L. 1977

MO, , , , , 7877 Solanum (Brevanthorum) umbellatum Mill. det. D'Arcy 1974
, . Shrub 2 m. tall. Corolla white, anthers yellow, berries green.

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Prov. Panamá, Panamá

MO, , , . 7878 Laciasis procerrima (Hack.) Hitchc. det. G.D. 1974
Stigmas conspicuously white, spikelets turning black.

MO, , , . 7879 Rub. Borreria latifolia (Aubl.) Schum. det. J.D. 1974
Forming loose mats to 1 m. tall. Corolla very pale blue, readily falling.

MO, , , , 7880 Rub. Manettia reclinata L. det. J.D. 1974
, . Vine to 2 m. Corolla red. Fruit green with faint reddish tinge.

MO, 7. 7881 Solanum asperum ~~Vahl~~ L.C.Rich. ! D'Arcy 1974
MADw 32480 @ Shrub 3 m. tall, foetid. Corolla white, fruit green.

MO, , . 7882 ~~Panicum~~ gravel Echinochloa colonum (L.) Link ! G.D. 1974

MO, , , . 7883 Cyperac. gravel Fimbristylis miliacea (L.) Vahl det. G.D.

MO, , . 7884 Fimbristylis dichotoma (L.) Vahl det. G.D.
gravel.

MO, , , . 7885 Cyperac. Rhynchospora contracta
gravel. det. W.W. Thomas

MO, , . 7886 Kyllinga brevifolia Rottb. det. G. Davidse, 197-
Aromatic. On gravel.

MO, 4. 7887 Eschaemum rugosum Salisb. ! G.D. 1974

MO, , . 7888 Lantana camara L. det. R. Liesner, 1974
Shrub 2 m. tall. Flowers light and dark orange.

MO, , , . 7889 Scleria pterota Presl
Large clumps. det. G. Davidse, 1974

MO, , , . 7890 Cyperus odoratus L.
gravel. det. G. Davidse, 197-

MO, . 7891 Eclipta alba (L.) Hassk. R.L. 1976.
gravel.

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? Det. T. M. Barkley 1976.

MO, , . 7892 Erechtites hieracifolia (L.) Raf. var. cacalioides (F. et S.) Grisb.
Much variation in size, from 2 dm. to over 1 m.

MO. 7893 ~~Eupatorium~~ Hebeclinum macrophyllum (L.) A.P.DC.
1 m. tall. Flowers white. det. R.L. 1977

MO, , , . 7894 Lityogramma calomelanos (L.) Link D.L. 1977

MO, 4. 7895 Trema micrantha (L.) Blume ! R.L. 1974
Shrub 3 m. tall. Flowers greenish, fruit green.

MO, , . 7896 Wulffia baccata (L.f.) Kuntze ! R.L. 1976
1 m. tall, beginning to become viny. Stem green and purple mottled. Bracts orange, fruit green.

MO, , , . 7897 Cissus microcarpa Vahl det. T. Croat, 1975
Extensive vine creeping over bare clay. Inflorescence red, disc orange.

MO, , , , . 7898 Clibadium asperum (Aubl.) DC. R.L. 1976.
3 m. tall. Flowers white, heads turning juicy green.

MO, 6. 7899 Salpichlaena volubilis (Kaulf.) J. Sm. ! D.L. 1977.
Vine twining to 1.5 m. on slender palms at edge of forest. Leaves stiff, stems harsh. This is fairly common in the forest and leaves are stiff even where growing in shade.

MO, . 7900 Paspalum virgatum L. det. G.D. 1974

MO, , , . 7901 ~~Digitaria~~ Axonopus compressus (Sw.) Beauv. det. G.D. 1974
Creeping.

MO, , , . 7902 Cordia linnaei Stern det. R. Liesner, 197
Shrub 2 m. tall.

MO, , . 7903 Euphorb. Croton trinitatis Millsp. det. R.L. 1974

MO, . 7904 Comp. Chaptalia nutans (L.) Polak ! Strother, 1977

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! G.D. 1974

MO, , , . 7905 Gram. Hyparrhenia rufa (Nees) Stapf to 2.5 m. tall. Culm greenish yellow, sheathes dark green, forming conspicuous alternating bands. This species is abundant along the Panam Hwy. between El Llano and Chepo (and elsewhere), forming stands along roadsides and covering whole fields of the "savanna" although it does not seem to be blooming yet there.

MO, , , . 7906 Solanum jamaicense Mill. ! D'Arcy 1974
Spreading shrub 1 m. tall. Fruit turning orange.

MO, , . 7907 Malachra alceifolia Jacq. det. R.L. 1974
Petals white.

MO, , . 7908 Andropogon bicornis L. det. G.D. 1974
2 m. tall.

MO, 13. 7909 Dioscorea trifida L.f. det. D. Tellez, 1984
Tangled vine to 2 m., covering shrubs. Flowers yellowish green.

MO, MAD, 4. 7910 Melastome. Miconia oinochrophylla D. Sm. det. R.L. 1974
MADw 32481 (w) Shrub 1.5 m. tall. Undersides of leaves purple. Fruit turning purple.

MO, MAD, 6. 7911 Piper marginatum Jacq. det. J. Conrad 1974
MADw 32482 (w) Strongly spicy aromatic shrub 2 m. tall. Spikes arching.

MO, , , . 7912 Convolv. Ipomoea tuxtlensis House det. D.F. Austin 1974
Vine at edge of forest. Flowers odorless. Corolla dull light purple at tip, tube green, brown-black at base within.

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MO, 5. 7913 Acanth. Mendoncia retusa Turrill
Vine at edge of forest. Fruit turning purple.
det. L. H. Durkee 1977

7914-7946 (in forest except as noted.)

MO, , . 7914 Trichomanes pinnatum Hedw. D.L. 1977.

MO, , . 7915 Aroid. Philodendron fragrantissimum (Hook.) Kunth. det. T. Croat 1975
Vine on trees. Fruit and rachis red, the fruit nearly gone. (ff) Petioles ca. ½ m. long.

cross section x 1

MO, , , , 7916 Anthurium cartiense Croat
Common epiphyte attached to trunks by mass of pale green corraloid roots.
det. Croat, 1981

MO. 7917 ¾ Polypodium triseriale Sw. D.L. 1977
Epiphyte.

MO, . 7918 (Carludovica) Thoracocarpus bissectus (Vell.) Harl.
Robust vine covering top of 10 m. tall broken off tree. This species climbs much higher on larger trees. Stem appressed to trunks, leafy shoots often free hanging for several meters. Inflorescence 4.8 x 9 cm. Det. B. Hammel, 1985

MO, MAD, . 7919 Theobroma bernoullii Pittier A. Gentry 1975
MADw 32483 (w) 10 m. tall tree with top broken off. Only one fruit seen, from trunk at 5 m. from ground. Fruit green, almost blue-green, 11.5 cm. long, see illustr. on next page.

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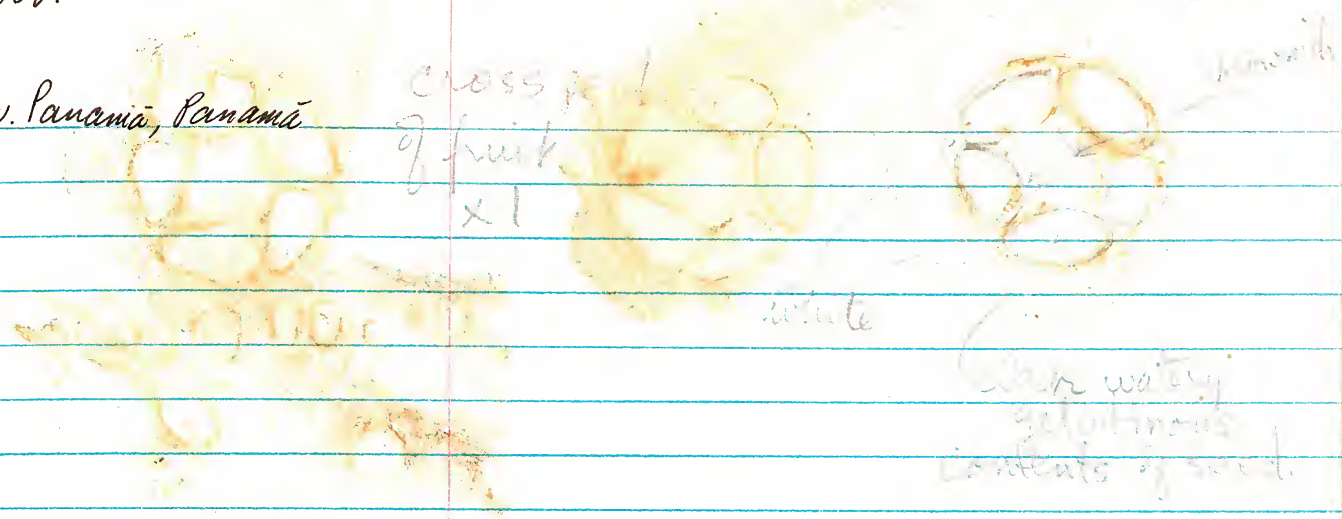

MO, MAD, 4. 7921 MADw 32485 ♂ Protium panamense (Rose) I.M. Johnst. ! T.C. 1974
(w) tree 10 m. tall. Fruit with strong resinous odor.
Fruit splitting, ~~red within~~ aril white, spongy juicy, inside of fruit bright pink.

MO, 8. 7922 ~~7921~~ Lycianthes
Vine to 10 m. in tree. Fruit greenish white, turning orange, to 1.9 cm. diam.

MO, MAD, 7. 7920 MADw 32484 ~~Annonac.?~~ Virola megacarpa A. Gentry Virola n.sp. det. A. Gentry 1974
(w) Tree 12 m. tall, wood soft. Carples fuzzy brown, one seeded.

MO, MAD, PMA, US. 7923 MADw 32486 ♀ Cissus neei Croat cf. Ann. MoBot Gard. 63:359
(w) Vine to 12 m. in tree. Leaves thick.
Fruit turning purple, to 1.1 cm. diam.

MO. 7924 Costus scaber R.&P. det. P.J.M. Maas 1978
Spiral stemmed herb 1 m. tall. Perianth red orange, staminodes and stamen light orange. Bracts red with greenish yellow triangle in center.

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MO, 6. 7925 Rub. Psychotria uliginosa Sw. det. J.D. 1974
Shrub 1 m. tall. Corolla red on outside, very pale red within. Fruit brilliant red.

MO, , . 7926 Piper pseudogargaranum C.DC.
Shrub ½ m. tall. det. J. Conrad, 1975

MO, , , , . 7927 Mikania hooveriana DC. R.L. 1976.
Vine at edge of forest.

MO. 7928 Heliconia curtispatha Peterson det. J. Kress, 1981
.. Herb 2.5 m. tall at edge of forest.
Inflorescence pendant, bracts spiral, red, flowers yellow.

MO, 5. 7929 Legume Desmodium barbatum Benth. + Oerst. det. R.L. 1974
Low herb in gravel of highway. Flowers purple in bud, blue during anthesis.

MO, , , . 7930 Guatteria amplifolia Triana + Planch.
Shrub 6 m. tall. Most fruits gone, purple on red stipes. Flowers still in bud. det. D.L. Lieser

MO, . 7931 Palm. Synechanthus warscewiczianus H. Wendl.
4 m. tall. Ripe fruit yellow and pale green.
det. A. Henderson + Ferreira 2000
Inflorescences 1–1.5 m. from ground ~~in axils~~ from axils of ~~dead~~ dead leaf sheathes.

MO, PMA, US. 7932 Palm. Iriartea exorhiza (Mart.) Wendl.
MADw 32487 ⓦ 7 m. to top of crown shaft.
Endosperm still watery. Fruit green, slightly asymmetric.
Inflorescence pendant, from second node below lowest leaf.
Leaf blade ca. 2 m. long.

long. section ×1

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MO, MAD, 9. 7933 Dichapetalaceae Flacourt. det. R. Liesner, 19__
Tapura Casearia nigricans Sleumer
MADw 32488 (w) Tree 10 m. tall. Flowers greenish-white, odorless. Only one fruit seen, green, globose, 2.5 cm. diam.

MO 7934 moss.
On large burned log at edge of forest.

MO, MAD, , . 7935 Pentagonia macrophylla Benth. det. J.D. 1974
MADw 32489 (w) Slender single stemmed shrub 4 m. tall. Fruit green, calyx reddish.

MO, MAD, 10. 7936 Cephaelis elata Sw. det. J.D. 1974
MADw 32490 (w) Shrub 5 m. tall. Bracts bright red, corolla white.

MO, 4. 7937 Fern. Cyathea petiolata (Hook.) Tryon
"Tree fern". Trunk 1 m. tall, petiole 75 cm. long. D.L. 1977.

MO, , . 7938 Palm Geonoma interrupta (Ruiz & Pav.) Mart.
MADw 32491 (w) Clump of wiry stems det. T. Croat. 1975 to 4 m. tall.

MO 7939. moss
On rotting log.

MO, MAD, 6. 7940 Buttf.? Rub. Cephaelis porteri Dwyer ined. det. J. Dwyer 1974
MADw 32492 (w) Shrub 5 m. tall. Fruit orange, to 2 cm. diam. Rudgea pittieri Standl. det. P. Matekaitis, 1982

MO, MAD, , , . 7941 Turnera panamensis Urb. det. R.L. 1974
MADw 32493 (w) Shrub 4 m. tall. Flower dull, almost orange-yellow.

MO, , , . 7942 Tectaria mexicana Fée D.L. 1977

MO. 7943 Aroid. Anthurium santafeense det. T. Croat 1979.
Terrestrial, spathe pale green, spadix

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white. ● cross section of petiole x 1.

MO, . 7944 Heliconia longa (Griggs) Wink det. A. Gentry
H. curtispatha Peterson det. Kreso, 1981
Giant herbs to 6 m. tall. Inflorescence pendant, bracts red, spiral. Flowers yellow.

MO, 4. 7945 Dicranopteris pectinata (Willd.) Underw.
Covering small opening and vine in shrubs at edge to 3 m. D.L. 1977.

MO, , , . 7946 Melastome. Leandra mexicana (Naud.) Cogn. det. R.L. 1974
Shrub 2 m. tall. Petals pink, fruit red, then dark purple.

7947-7948 Shrubby roadside.

MO, 8. 7947 Piper auritum HBK. det. J. Conrad 1974
Shrub 3 m. tall, very pleasantly spicy fragrant.

MO, 4. 7948 Piper villiramulum C.DC. det. J. Conrad 1974
Shrub 1.5 m. tall. Spikes erect, turning from green to cream to brown.

7949-7950 Second growth.

MO, MAD, , , . 7949 Cecropia hispidissimum Cuatr. det. J. Conrad 1974
MADw 32494 ⓦ Unbranched tree 10 m. tall. Not ant infested. Leaves white below, shiny green above, petioles to 90 cm. long. Spikes held erect. The stiff sharp hairs are annoying and penetrate the skin.

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MO, MAD, 9. 7950 Witheringia aff. asterotricha (Standl.) Hunz.
MADw 32495 (w) Shrub 2 m. tall. Fruit turning light orange. det. W.G. D'Arcy, 1991

~~MO~~ MO, , . 7951 Poulsenia armata (Miq.) Standl. ! Conrad
Tree 20 cm. dbh, 10 m. tall at edge of forest. With copious milky sap and sharp spines. Fruit green, very few seen.

MO. 7952 Microtea debilis Sw. R.L. 1975
Weed on road gravel. Flowers white.

7953-7970 Grassy roadside. Pan Am. Hwy, 2 Km. W of El Llano.

MO, MAD, 8. 7953 Legume. Sesbania emerus (Aubl.) Urb. det. J. Dwyer
MADw 32496 (w) Straight stemmed, to 3.5 m. tall. Petals orange-yellow, standard with reddish lines, keel red at tip.

MO, , , . 7954 Gram. Rottboellia exaltata L.f. det. G.D. 1974

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7955 [This number skipped by mistake]

MO, , , . 7956 ~~Melo~~ Melochia villosa (mill.) Fawc. & Rendl. det. A.G.
1 m. tall. Petals pale purple, white at base.

MO, , , . 7957 Comp. Baltmora recta L. R.L. 1976.
To 1 m. tall. Rays yellow.

MO, , , . 7958 Rub. Borreria densiflora DC. det. J.D. 1974
1 m. tall. Corolla white.

MO, . 7959 Desmodium canum (Gmel.) Schinz & Thellung det. R.L. 1974
Creeping. Petals blue-green.

MO, , , . 7960 Chamaesyce hypericifolia (L.) Millsp. R.L. 1976.

MO. 7961 Rub. Oldenlandia corymbosa L. det. J.D. 1974
Corolla very pale blue, almost white.

MO, , , . 7962 Malv. Malachra alceifolia Jacq. det. R.L. 1974
1 m. tall. Corolla white.

MO, MAD, 5. 7963 ? Sida glomerata Cav. det. R.L. 1974
MADw 32497 (w) Slender shrub 1 m. tall. Corolla white, anthers bright yellow.

MO, MAD, 4. 7964 Malv. Urena lobata L. var. sinuata (L.) Hochr. det. R.L. 1974
MADw 32498 (w) Shrub 2.5 m. tall. Corolla and stamens rose.

MO, , . 7965 Croton trinitatis Millsp. det. R.L. 1974.

MO, MAD, 6. 7966 Corchorus siliquosus L. det. R.L. 1974
MADw 32499 (w) Shrub 1.5 m. tall. Flowers bright yellow

MO, MAD, 6. 7967 Cassia patellaria DC. det. R. Liesner, 1975
MADw 32500 (w) Forming a clump of upright stems, much branched above the base. Flowers yellow.

MO, MAD, 11. 7968 Indigofera suffruticosa Mill.
MADw 32501 (w) Shrub 2 m. tall. det. J. Dwyer

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MO, MAD, 6. 7969 Mimosa pigra L. det. R.L. 1974
MADw 32502 (W) Low spreading shrub 2 m. tall. Fruit held horizontally, fuzzy brownish green when immature. Leaves sensitive but slower than M. pudica.

MO, 4. 7970 Trema micrantha (L.) Blume det. R.L. 1974
Shrub 1 m. tall. Fruit green, turning orange.

7971-7973 At Pan Am Hwy. bridge over Río Pajiba.

! M.C. Johnston 1974

MO, 15. 7971 Colubrina heteroneura (Griseb.) Standl.
shrub 5 m. tall in fencerow. Perianth white, disc yellow.

MO, . 7972 Oryza sativa L. ! G. Davidse 1974
Cultivated in low flat field.

MO, 6. 7973 Ischaemum rugosum Salisb. ! G.D. 1974
Weed in Oryza sativa field.

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This page is of lichens etc. sorted out later at the Herbarium. See under appropriate number for data.

7974-7978 On trunk of *Cecropia* # 7949

US. 7974 Graphid
US. 7975 "
US. 7976 lichen *Sarcographa*
US. 7977 " Graphid.
US, . 7978 " sterib crust?

7979-7981 Ca. 1 m. from ground on *Cephaelis* # 7936.
US, . 7979 lichen Pyrenocarp.
F. 7980 hepat.
US. 7981 ~~Hymenium~~ Coenogonium

US, . 7982 lichen
At 1 m from ground on *Protium panamense* # 7921.

Nov. 13, 1973

Canal Zone, ~~[illegible]~~ Panamá

17PPA 481/024

Melinis minutiflora Beauv. det. G.D. 1974

MO, 23. 7983 ~~Rhynchelytrum~~

with Hyparrhenia rufa on open roadside bank along Gaillard Hwy., ½ km. NW of Summit Garden. alt 85 m. forming a tangled loose mat below with stems sending down roots. Inflorescence reddish. Plant somewhat viscid. I first noticed this patch in August by the characteristic heavy sweet odor detectable several meters away. It has just come into bloom in the last few weeks. I have not seen any other in the vicinity of Summit Garden or ~~[illegible]~~ Gamboa.

[I wouldn't have gotten so many duplicates of this commonplace tropical grass except it was reported neither in Standley's Flora of the Canal Zone nor the treatment of the Grasses for the Flora of Panamá and the herbarium specimens at SCZ are all from higher altitudes.]

17PPA 479/025

MO, 13. 7984 Inga ruiziana G. Don det. R.L. 1974

Small tree 8 m. tall along Gaillard Hwy. ½ km. NW of Summit Garden. alt. 90 m. Flowers odorless, stamens white.

Nov. 15, 1973

Canal Zone, Panamá

17PPA 489/024

MO, 5. 7985 Legume. Caesalpinia sappan L. det. G. Lewis, 2002
Spiny shrub 4 m. tall. Cult. in Summit Garden.
Fruit light green. alt. 80 m. Probably same
shrub collected Jan. 12, 1974 sub # 9263.

MO 7986 moss.
On root in grove of cult. Hevea, Summit Garden alt. 80 m.

17PPA 487/021

7987-7994 At 0-2 m. on large cult. Swietenia,
Summit Garden. ~~alt~~ alt. 80 m.

US, . 7987 lichen Pyrenocarp.
US, , . 7988 " Collema
US. 7989 "
US. 7990 " Pyrenocarp.
US, , . 7991 " Coccocarpia
US, . 7992 " crust.
US, 7. 7993 " crust.
F, , , , 7994 hepat.
. ~~799~~

Nov. 16, 1973

Prov. Veraguas, Panamá
17 PNU 242/962

7995-8010 Grassy roadside and brushy pasture along PanAm Hwy, 1/2 km. W of Hwy 50 turnoff to Ocú. alt. 30 m.

det. R.L. 1974

MO, , . 7995 Malv. Pavonia riedelii Gürke var. ovata (Presl.) A. Robyns
To 2 m. tall. Flowers odorless, yellow.

MO, 4. 7996 Piper pseudofuligineum C.DC. det. J. Conrad, 1975
1 m. tall. Spikes erect.

MO, , . 7997 Lab. Ocimum micranthum Willd. det. R.L. 1974

MO, , . 7998 Lab. Hyptis suaveolens (L.) Poit. det. R.L. 1974
To 2 m. tall, unbranched, strongly aromatic. Corolla blue.

MO. 7999 Scoparia dulcis L. det. J.H. 1974

MO, 5. 8000 Legume. Desmodium barbatum (L.) Benth. & Oerst. det. R.L. 1974
Flowers blue-purple.

MO, . 8001 Rub. Diodia teres Walt. det. J.D. 1974

MO, 5. 8002 legum. Stylosanthes humilis HBK. det. R.L. 1974
Flowers dull orange.

MO, . 8003 Paspalum paniculatum L. det. G.D. 1974

MO, . 8004 Malv. Sida rhombifolia L. det. R.L. 1974

MO. 8005 Lantana
Flowers light and dark orange. Fruit green. 1 m. tall.

MO. 8006 Chamaesyce hirta

MO, , . 8007 Chamaesyce hyssopifolia (L.) Small det. R.L. 1976 "Acalypha" sic!

MO. 8008 Phyllanthus caroliniensis Walt. det. R.L. 1974

MO. 8009 Rub. Diodia teres Walt. det. J.D. 1974

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MO, 4. 8010 Hyparrhenia rufa (Nees) Stapf. det. G. D. 1974
To 2 m. or more tall. Abundant. This is the dominant grass of the grassy roadside along the Pan Am Hwy. between Panamá City and Santiago.

This was to be my most extended trip so far. I left Panamá about noon on Friday and got back home to Summit Garden just before sundown on Monday. I knew I couldn't get to Santiago before dark, so just as light was getting to be critical, I hopped out, grabbed a bunch of weeds to press later in the terrible light of the hotel I stayed at in Santiago and felt overcharged at the $3.00 it cost me.

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MO, . 8011 Gustavia superba (Kunth) Berg. ! S. Mori 1974

Young trees, mostly single stems, to 6 m. tall, others in area larger and much branched. Commonly cultivated in Santa Fé, a few trees often being found in the house yards which ~~are a~~ harbor a profusion of shade and fruit trees, ornamentals and vegetables.

"membrillo". Flowers here in ~~at~~ April and May, the edible fruit being ripe ~~in~~ from June to August.

Between Santiago (one seen there in cult. but it doesn't seem to be common) and Sta. Fe, this species is ~~cultivated in~~ common in cultivation in San Francisco, one seen cultivated in the small village of San Juan, and one seen, apparently native, along the first Quebrada north of the Río Santa María bridge.

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8012-8106 Pasture, fencerows and roadside just south of Santa Fé. Tropical moist forest. alt ca. 450 m.

MO, , . 8012 Convolv. Ipomoea lindenii Mart. & Gal. det. D. F. Austin 1974
Vine to 2 m. Ends of corolla lobes purple, rest light green.

MO, 4. 8013 Smilax spinosa Mill. det. R. Liesner, 1975
Vine. Berries green, turning purple.

MO, 5. 8014 Cordia spinescens L. det. R. Liesner, 197-
Shrub 2 m. tall. Corolla white.

MO, 4. 8015 Lab. Marsypianthes chamaedrys (Vahl) Ktze. det. R. L. 1974
Sprawling herb. Corolla blue.

MO, 4. 8016 Hyparrhenia rufa (Nees) Stapf. det. G. D. 1974
2 m. tall.

MO, 3. 8017 Scleria bracteata Cav.
1 m. tall. Some seen clambering to 5 m. in shrubs, forming a dangerous tangle.

MO, . 8018 Croton panamensis (Kl.) Muell.-Arg. det. R. L. 1974
Shrub 2 m. tall.

MO, 5. 8019 Mal pigh. Banisteriopsis muricata (Cav.) Cuatrec.
Vine covering shrubs. Petals light purple, fading, one yellow at base. det. J. Croat, 1975

MO. 8020 Piper marginatum B. Jacq. det. J. Conrad 1974
1.5 m. tall. Spikes arching. Spicy aromatic.

MO, 5. 8021 Comp. Calea pittieri Rob. & Greenm.
Shrub 2 m. tall. Heads yellow, with sweet odor. det. R. Liesner, 1976.

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MO, 4. 8022 Comp. Wedelia inconstans D'Arcy det. R.L. 1976
2 m. tall. Disc and rays yellow.

MO, , . 8023 Erythrina berteroana urb. det. B.A. Krukoff 1974
Shrub 20 cm. dbh, 6 m. tall, a living fencepost. Pods dead, seeds bright orange, some germinating.

MO, , , . 8024 Trema micrantha (L.) Blume det. R.L. 1974
Small tree 8 m. tall, 20 cm. dbh. Fruit green, turning orange.

MO, , , , . 8025 Loranth. Struthanthus orbicularis (HBK.) Blume
Common parasitic vine draped on #8024.

MO, , . 8026 Rub. Diodia teres Walt. det. J.D. 1974
Corolla pale purple.

MO, 5. 8027 Malv. Pavonia sessiliflora HBK. det. R.L. 1974
Shrub 1 m. tall with unbranched stems spreading from branched base.

MO, 5. 8028 ~~Malv.~~ Waltheria glomerata Presl det. R. Liesner
1 m. tall. Corolla white, stamens yellow.

MO, 5. 8029 Eleocharis filiculmis Kunth
dense clumps. det. G. Davidse, 197_

8030-8051

MO, 4. 8030 Clusia minor L. = C. pratensis Seem. (apomictic) see over!
Tree 6 m. tall. Corolla pink, odorless. Fruit green, tinged with red. Flower buds green and white. det. B. Hammel, 1984.

MO, MAD, , , , 8031 Rub. Gonzalagunia rosea Standl. det. J.D. 1974
, . MADw 32503 (w) Slender shrub 2.5 m. tall. Corolla white, fruit dark purple.

[? Work seems to be missing at MADw. Apr. 1990]

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N.B. 8030-8051 Forest remnant along quebrada.

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det. R.L. 1974

MO, , , . 8032 Mimos. Calliandra magdalenae (Bert.) Benth.
Shrub 6 m. tall with spreading branches. Inflorescence odorless. Stamens white below, red distally.

MO, 4. 8033 Peperomia obtusifolia (L.) A. Dietr.
On large boulder. det. R.L. 1976

MO, . 8034 Cactus. Hylocereus polyrhizus (Web.) Br. & Rose det. H. Bravo & R. Scheinvar 1985
On large boulder. Cross section stem x1 →

MO, , , , , 8035 Rub. Alibertia edulis (Rich.) Rich. ! J.D. 1974
. Shrub 3 m. tall. Fruit light green.

MO, , , , , 8036 Rub. Psychotria carthaginensis Jacq. det. J.D. 1974
. Shrub 2 m. tall. Fruit green.

MO, 4. 8037 Icacorea brevis (Lundell) Lundell Ardisia brevis Lund. det. Lundell, 1979
Shrub 3 m. tall. det. Lundell, 1985.

MO, , , , , . 8038 Aroid. Syngonium mauroantum Bunting det. T. Croat 1978 & 1982.
Vine in shrub. Inflorescence hanging, spathe green on outside, red-purple within.

det. T. Croat 1974

MO, 6. 8039 Loranth. Psittacanthus calycanthus (DC.) G. Don
Parasitic shrub with stems to 2 m. long on cf. Byrsonima. Tube orange, recurved lobes yellow, stamens and style red.

MO, , , , , . 8040 Rub. Guettarda odorata (Jacq.) Lam. det. J.D. 1974
Large shrub 8 m. tall. Fruit dark purple, almost black.

MO, , , , , . 8041 Philodendron scandens C. Koch & Sello det. T. Croat 1975
Vine to 8 m., attached to tree and with free hanging portions. Inflorescences

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held erect, Spathe green outside, purple at base within.

MO, 4. 8042 Guazuma
Small tree. Fruit green, immature.

MO, 3. 8043 Piper aduncum L. det. J. Conrad, 1975
Shrub 3 m. tall. Spikes arching.

MO, 3. 8044 Adiantum petiolatum Sw. det. D.B. Lellinger 1977

MO, 8. 8045 Legume. Canavalia villosa Benth. det. R.L. 1974
Vine covering small tree and with many free hanging flowering portions. Calyx green, with purple spots. Petals rather thick, light purple and white, recalling some cultivated varieties of Cattleya and with the same sweet fragrance. Very few fruits seen.

MO, , , . 8046 ~~Govania lu~~ G. polygama (Jacq.) Urb.
Viny. Flowers greenish-white.

MO, . 8047 Adiantum villosum L. det. D.B. Lellinger 1977

MO, , , . 8048 Mikania
Vine.

MO, 7. 8049 Chrysophyllum cainito L. det. G. Pilz 1975
Small tree with milky sap. Fruit green.

MO, 4. 8050 Vismia paramensis Duchass. + Walp.
Small tree. det. N. Robson, 1978

MO, . 8051 ~~Vittaria~~ Ananthacorus angustifolius (Sw.) Underw. + Maxon
Epiphyte on trunk of large cf. Anacardium.
det. D.B. Lellinger 1977.

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det. J. Kuijt 1974

M MO, 9. 8052 Loranth. Phoradendron piperoides (HBK) Trel.
Parasitic shrub on Cecropia. Fruit orange.

MO, 7. 8053 Loranth. Psittacanthus schiedeanus (Schlecht. & Cham.) Blume
Parasitic shrub on small tree. Flowers
N odorless, bright red-orange. det. J. Kuijt 1974

MO, 5. 8054 Gram. Lasiacis sorghoidea (Desv.) Hitchc. & Chase
M Arching, to 2 m. tall. var. sorghoidea det. G. D. 1974

MO, 6. 8055 Asclep. Matelea viridiflora (Mey.) Woods. det. D. Spellman 197
Vine on ground and into shrubs. Corolla
rotate, green, center yellow. Flowers odorless.

M MO, 4. 8056 Burser.
Tree 35 cm. dbh. Fruit green.

M MO, 7. 8057 Ficus maxima Mill. det. J. Conrad, 1975
Tree 10 m. tall, much branched from large
M buttressed base. Figs green, rough.

MO, 8. 8058 Posoqueria latifolia
Small tree 7 m. tall, 20 cm. dbh. Fruit
to ca. 5.5 cm. diam., speckled green and light green,
N turning orange. The inside of the fruit pure
white, the almost translucent yellowish
white seeds (which look remarkably like the
center of jelly beans) surrounded by a
N tasty sweet orange pulp which is good
when the fruit is ripe but still green. Embryo white
Two Panamanians at the Dredging Division, Gamboa C.Z.
M were well familiar with the plant, asking
me if it ~~came~~ came from Gatún.
"teta vieja" "café portorriqueño" The

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Young fruit said to be filled with a sweet sap. The seeds can be roasted and used as coffee. They told me ~~it was~~ the pulp was edible, saying "you can eat anything the monkeys eat," but watch out if they won't eat it!"

US, . 8059 ~~Leg~~ lichen. Collema or Leptogium
At 2 m. on Posoqueria #8058.

MO, , , . 8060 Sapium caudatum Pittier? det. R.L. 1974
Tree 10 m. tall, copious milky sap. Leaves stiff. Fruit green with reddish tinge.

MO, 4. 8061 Byrsonima crassifolia (L.) HBK.
Shrub 5 m. tall. det. T. Croat, 1975

MO, 4. 8062 Piper friedrichsthalii C.DC. det. J. Conrad 1974
1 m. tall. Spikes arching.

MO, 4. 8063 Rhamnac. Colubrina glandulosa Rerkin var. glandulosa det. T.C. 1974
Tree 10 m. tall. Flowers green, with sweet but not very pleasant odor reminiscent of horse urine.

MO, , , . 8064 Bursera simaruba (L.) Sarg. det. T.C. 1974
Living fence post 4 m. tall. Bark green, with red brown peeling layers.

MO, , . 8065 Apoc. Mesechites trifida (Jacq.) Muell.-Arg. det. A.G. 1974
Vine to 6 m. in small trees. Corolla lobes white, throat and tube green.

MO, , , , . 8066 Lygodium venustum Sw. det. D.B. Lellinger 1977
Vine to 3 m. in fencerow.

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MO, 4. 8067 Bignon. Arrabidaea patellifera (Schlechf.) Sandw.
Vine hanging out of tree. Fruits only. det. A. Gentry Dec. 8, 1973

MO. 8068 ? Luehea speciosa Willd.
Tree 10 m. tall, ca. 25 cm. dbh. with buttresses to 2 m. Petals white or very pale yellow.

MO, 4. 8069 Ficus nymphaeifolia Mill. det. J. Conrad, 1975
4 m. tall living fencepost, copious milky sap. Figs to 2.2 cm. diam, light green with lighter spots, many with faint reddish tinge.

MO, , , . 8070 Fern. Thelypteris patens var. scabriuscula (Presl) A.R. det. D.L. 1983

MO, . 8071 Anemia hirsuta (L.) Sw. det. D.B. Lellinger 1977

MO, . 8072 Scroph.?
Aromatic, like Acorus calamus. In wet spot.

MO. 8073 ? Sauvagesia erecta L. ! R.L. 1974

MO, . 8074 Fern. Blechnum occidentale L. f. occidentale det. D.B. Lellinger 1977

MO. 8075 Scroph. Lindernia diffusa (L.) Wettst. det. R.L. 1974
Three lower corolla lobes white, upper "hood" pale purple.

MO, . 8076 ~~Panicum~~ Isachne polygonoides (Lam.) Doell. det. G.D. 1974
low spot.

MO, , . 8077 Digitaria Axonopus compressus (Sw.) Beauv. " "
Extensively creeping, rooting at nodes.

MO. 8078 Convolv. Jacquemontia hirtiflora (Mart. & Gal.) O'Don. det. G.F. Austin 1974
J. tamnifolia (L.) Griseb. det. R.L. 1977
Viny. Corolla very pale blue, almost white.

MO, 4. 8079 ? Malv. Waltheria indica L.
0.75 m. tall. Flowers yellow.
det. R. Liesner, 197-

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MO, , . 8080 Chamaesyce hyssopifolia (L.) Small det. R.L. 1976

MO, , . 8081 Scoparia dulcis L. det. J.H. 1974

MO, , , . 8082 ~~Malv.?~~ Melochia melissaefolia Benth. det. R.L. 1977
Low. Petals white.

MO. 8083 Eryngium foetidum L.
Occasional.

MO, 3. 8084 Lab. Hyptis capitata Jacq. det. R.L. 1974
1 m. tall. Corolla white.

MO, 4. 8085 ~~Comp.?~~ ? Elephantopus dilatus Gleason
Clump 1 m. tall. det. R.L. 1976

MO, , , , , , 8086 Solanum (§ Torvum.) ochraceo-ferrugineum (Dun.) Fern. det. D'Arcy 1974
Shrubs to 3 m. tall. Corolla white.

MO, , , . 8087 Malachra alceifolia Jacq. det. R.L. 1974
Petals white.

MO, . 8088 Phyllanthus amarus Schum. det. R.L. 1974

MO, 4. 8089 Mimosa pigra L. ! R.L. 1974
Shrub 1.5 m. tall.

MO, . 8090 Rub. Borreria ocymoides (Burm.) DC. B. laevis (Lam.) Griseb. det. J. Dwyer 1976 det. J. Dwyer 1979

MO, . 8091 Drymaria cordata (L.) Willd. ex R+S.

MO, . 8092 Comp. Conyza chilensis Spreng. det. J. Strother, 1986

MO, . 8093 Paspalum conjugatum Berg. det. G.D. 1974

MO, . 8094 Panicum pilosum Sw. " "

MO, 4. 8095 Fimbristylis dichotoma (L.) Vahl det. G. Davidse

MO. 8096 Polygala paniculata L. ! R.L. 1974

MO, 4. 8097 Legume. Cassia tagera L.
Mat. Flowers yellow. det. R. Liesner, 1975

MO, , , . 8098 Croton trinitatis Millsp. det. R.L. 1974

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MO, 4.	8099	Lab. Hyptis brachiata Brig.? det. R.L. 1974 1 m. tall. Corolla white.
	8100	Legume. Protrate.
MO, 4.	8101	Comp. Centrantherum punctatum Cass. Flowers light purple. det. R.L. 1976
MO, 4.	8102	Paspalum multicaule Poir. det. G.D. 1974
MO, 3.	8103	Rub. Borreria verticillata (L.) Mey. det. J.D. 1974 Corolla white. Spermacoce densiflora det. Adams
MO, , .	8104	Gram. Sporobolus ciliatus Presl det. G.D. 1974
MO.	8105	Erechtites
MO, , .	8106	Laciasis sorghoidea (Desv.) Hitchc. & Chase var. sorghoidea Arching, to 2 m. tall.

I took off just before it started getting dark, looking for a campsite, and finding a fine one along the road where I began collecting the next morning, I set up my tent and had a bite to eat while a warm wind blowing up the valley helped dispell the dreariness of the last day and a half of constant drizzle, rain and overcast.

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17PMV 929-932/348-354

8107-8145 Weedy and brushy roadside and pasture above Río Santa María along road to Santiago, 5 km. S of Santa Fe.

alt. 250-300 m.

MO, , . 8107 Apoc. Mandevilla hirsuta (H. Rich) K. Schum. det. A.G. 1974
Vine. Flowers sweet smelling. Corolla lobes pale yellow, tube red within.

MO, 5. 8108 Coccoloba lasseri Lundell det. R.L. 1974
Small tree 7 m. tall, 25 cm. dbh. Racemes hanging, fruit green, perhaps not turning ~~color at~~ color when ripe.

MO. 8109 Oryza sativa L. ! G.D. 1974
In gravel and asphalt at edge of pavement. Only one seen, seems to be ~~an escape~~ ~~surely~~ a casual escape and surely not established.

MO, , , . 8110 Sorghum bicolor (L.) Moench det. G.D. 1974
Several plants on roadside bank. Probably an escape from ~~cul~~ cultivated patch in the floodplain between the road and the Santa María River.

MO, , . 8111 Evolvulus alsinoides (L.) L. det R.L. 1977
Corolla blue.

MO, , , . 8112 Legume. Desmodium angustifolium (H&K.) DC. det. R.L. 1974
1 m. tall. Flowers purple or blue-green.

MO, 7. 8113 Aristida jorullensis Kunth. det. G.D. 1974

MO, . 8114 Eragrostis simpliciflora (Pres) Steud " "

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MO, , , . 8115 Comp. Simsia
Rays and disc yellow.

MO, MAD, 6. 8116 Hyptis brachiata Brig. det. R.L. 1974
MADw 32504 (w) 2 m. tall. Corolla white

MO, 6 8117 Crotalaria vitellina Ker. " "
1.5 m. tall. Petals yellow, flowers odorless.

MO, 8. 8118 ~~Rhynchelytrum~~ Melinis minutiflora Beauv. det. G.D. 1974

MO, 14. 8119 Panicum trichoides Sw. " "

MO, 6 8120 Pedilanthus tithymaloides (L.) Poiteau det. R.L. 1974
1 m. tall. Sap milky. Flowers bright red.

MO, . 8121 Comp. Senecio confusus Britten (aff.) det. T.M. Barkley 1976
Viny, to 1.5 m. Flowers red.

MO, , , . 8122 ? ~~Clitoria~~ Centrosema sagittatum (H+B.) Brandegee ex Riley det. R.L. 1974
Herbaceous vine. Keel pale greenish white with pale purple area in center, wings and standard white with purple areas.

MO, , , , . 8123 Randia armata L. det. J.D. 1974
Shrub 3 m. tall. Fruit to 2 cm. diam., yellow orange, the hard light brown seeds surrounded by juicy black molasses-smelling pulp, much like that of Randia armata.

MO, 7. 8124 Malpigh. Tetrapterys calophylla Adr. Juss. var. glabrior Benth. det. W.R. Anderson 1976
Vine to 3 m. Petals yellow or orange, bracts dull brownish.

MO, 13. 8125 Machaerium seemannii Benth. det. J. Dwyer
Tree 12 m. tall, 25 cm. dbh.

MO, 4. 8126 Bignon Arrabidaea patellifera (Schlecht.) Sandw. det. A. Gentry Dec. 8, 1973
Vine to 4 m. Fruit green.

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8128 = Randia armata L. det. J Dwyer
acc to a list of dets I received 1976 - MHeo

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MO, 13. 8127 Zornia reticulata Sw. (Sm.?)
Prostrate. Stems 1 m. long.

[8128 missing]

MO, . 8129 Eragrostis maypurensis (HBK) Steud. det. G.D. 1974

MO, 11. 8130 Legume Desmodium barbatum (L.) Benth. & Oerst. det. RL. 1974
Dense low clump. Flowers blue to light purple.

MO, 15. 8131 Legume
Sprawling. Flowers yellow.

MO, 5. 8132 Dalechampia tiliifolia Lam. ! R.L. 1974
Vine on shrubs. Bracts very pale yellowish green, almost white.

MO, 10. 8133 Cyathula prostrata (L.) Blume det. R.L. 1974

MO, 6. 8134 Legume. Calliandra magdalenae (Bert.) Benth. " "
8 m. tall, 20 cm. dbh. Does not seem to be confined to the immediate bank of the quebrada. Filaments and style white below, dark pink distally.

MO, , . 8135 Dioscorea cymulosa (cymulosula) Hemsl. det. F. Ayala 1976
Vine into tree.

MO, 6. 8136 Lasiacis sorghoidea (Desv.) Hitchc. & Chase var. sorghoidea det. G.D. 1974
Arching, 2 m. tall.

MO. 8137 Legume. Poiretia punctata (Willd.) Desv. det. Crowder 1983
Slender herbaceous vine covering shrub to 1 m. with unpleasant smell. Flowers yellow.

MO, MAD, 7. 8138 Indigofera suffruticosa Mill. det. R.L. 1978
MADW 32505 (w) Shrub 3 m. tall.

MO, 5. 8139 Cassia patellaria DC. det. R. Liesner, 1975
Numerous upright stems from branching base. Petals yellow, anthers orange.

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17PMV 929-932/348-354

MO, , . 8140 Speiba tibourbou Aubl. det. R.L. 1974
2 m. tall, some in vicinity small trees. Sap gelatinous. Petals yellow, flowers with heavy sweet fragrance.

MO, , . 8141 Malv. Sida linifolia Juss. det. R.L. 1974

MO, , . 8142 Polypodium polypodioides (L.) Watt. var. polypodioides
Covering trunk of tree det. D.B. Lellinger 1977

MO, , , . 8143 Convolv. Jacquemontia hirtiflora (Mart. & Gal.) O'Don. [J. tamnifolia (L.) Griseb.] det. R.L. 1977.
Small vine, corolla blue. det. D.F. Austin 1974

MO, 5. 8144 Malpigh. Banisteriopsis muricata (Cav.) Cuatrec.
Vine covering shrubs. Petals pink, fading, one yellow at base. Stamens yellow. det. T. Cuat. 1975

MO, 3. 8145 Hyparrhenia rufa (Nees.) Stapf. det. G.D. 1974
common.

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ca. 17PMV 95/302

MO, 13. 8146 Legume. Diplysa robinioides Benth.
Small tree 5 m. tall, 15 cm. dbh. in fencerow at edge of roadside and pasture, ca. ½ km. N of Quebrada El Nance on road to Santa Fé. 10 km. S of Santa Fe. With abundant odorless yellow flowers visited by many bees, of at least 2 species.
alt. ca. 250 m.

Nov. 18, 1973

N.B. The new road to Sta. Fe (between Qda. El Nance & San Jose) apparently follows a different route from that shown for the old road on the Cerro Las Minas 1:50000 quadrangle. In any case, the bridge is within 1 km. of the Río Santa María.

Prov. Veraguas, Panamá
ca. 17P MV 95/297

8147 - 8159 Roadside and brushy pasture along Quebrada El Nance at the Santiago-Santa Fe road bridge, 11 km. S of Santa Fe. alt. 220 m.

MO, 10. 8147 ~~Pachira~~ Bombacopsis sessilis (Benth.) Pitt.
Tree 10 m. tall, 30 cm. dbh. at edge of quebrada. Style red. Flowers with musty odor.

MO, 4. 8148 Piper friedrichsthalii C.DC. det. J. Conrad 1974
1 m. tall. P. lanceafolium Kunth det. M. Tebbs, 1989

MO, , , . 8149 Comp. Porophyllum ruderale (Jacq.) Cass. ssp. macrocephalum (B.C.) Johnson det. R. L. 1976
Ill-smelling, 1.5 m. tall.

MO, , , , , . 8150 Lab. Hyptis suaveolens (L.) Poit. det. R. L. 1974
Aromatic but not pleasantly so. Corolla blue.

MO, , , , , . 8151 Malpigh. Tetrapterys caloplylla Adr. Juss. det. W.R. Anderson 1976
Prob. same vine coll. ; my fruit Feb. 17, 1974 sub # 9916
Vine in shrubs. Petals yellow, then orange.

MO, 5. 8152 ? Olac. Schoepfia schreberi J.F. Gmel. det. J. Humbles 1974
Shrub 4 m. tall. Fruit green with red tip.

MO, , . 8153 Acanth. Aphelandra deppeana
Weak stemmed shrub 2 m. tall. Flowers red-pink. det. L.H. Durkee 1977

MO, , , , . 8154 Genipa americana L. det. J. D 1974
small tree.

MO, , , . 8155 Myrsin. ? Icacorea brevis (Lundell) Lundell = Ardisia b.
Shrub 3 m. tall. det. Lundell, 1985.

MO. 8156 Chloris Axonopus chrysoblepharis (Lag.) Chase det. G.D. 1974

MO, 4. 8157 Gram. Bouteloua repens (HBK.) Scribn. & Merr.
Anthers orange. det. G.D. 1974

 Nov. 18, 1973

Prov. Veraguas, Panamá
ca. 17PMV 95/297

MO, , , . 8158 Tagetes: Pectis elongata HBK. var. oerstediana (Rydb.) Keil
Crevices of rocks along stream. Strong scented, ~~flow~~ Flowers yellow. det. R.L. 1976

MO, 4. 8159 Desmodium cajanifolium (HBK) DC. det. R.L. 1974
1.5 m. tall.

Ca. 17PMV 955/238

8160-8186 Grazed rocky hilltop with low shrubs. Vic. San José on Santiago-Santa Fe highway, 18 Km. S of Santa Fe. alt. 400 m.

MO, , . 8160 Rhynchospora barbata

MO, , , . 8161 Cassia tetraphylla Desv. var. aurivilla Irwin
½ m. tall. Flowers yellow. det. R. Liesner, 1975

MO, . 8162 Gentianaceae.
Corolla white.

MO, 5. 8163 Aristida jorullensis Kunth det. G.D. 1974

MO, . 8164 Legume: Stylosanthes guyanensis (Aubl.) Sw. det. R.L. 1974

MO, . 8165 Gram. Schizachyrium hirtiflorum Nees det. G.D. 1974

MO, 8. 8166 Paspalum stellatum H.+B. det. G.D. 1974

MO, 9. 8167 Trachypogon " "

MO, , , . 8168 ~~Andropogon~~ Schizachyrium microstachyum (Desv.) R. A. + I. " "
1.5 m. tall.

MO, , . 8169 ~~Chloris~~ Axonopus aureus Beauv. " "

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Prov. Veraguas, Panamá

ca. 17 PMV 955/238

MO, , , , . 8170 Rub. Guettarda odorata Lam. det. J.D. 1974
Shrub 4 m. tall. Fruit very dark purple.

MO, 4. 8171 Gram. Sporobolus ciliatus Presl det. G.D. 1974

MO, , . 8172 Solan. ? Schwenkia americana L. det. D'Arcy 1974
Corolla purple, darker toward tip. Coll. here in fruit + flower on Feb. 17, 1974 sub #9918.

MO. det. R.L. 1974 8173 Legume. Eriosema crinitum (HBK) G. Don

MO, , , . 8174 Andropogon bicornis L. det. G.D. 1974
2 m. tall.

MO. 8175 Comp. Elephantopus mollis HBK det. R.L. 1976

MO, , , , , , . 8176 Clibadium surinamense L. det. R.L. 1976

MO, 4. 8177 Lab. Hyptis suaveolens (L.) Poit. det. R.L. 1974
Sprawling. Corolla blue.

MO, , , . 8178 Rub. Palicourea triphylla DC. det. J.D. 1974
Bushy shrub 1 m. tall. Inflorescence branches orange, corolla yellow.

MO. 8179 Rub. Coccocypselum lanceolatum " "
Prostrate. Fruit brilliant blue, seeds brown.

MO. 8180 Rub.
Corolla white.

MO. 8181 ? Turnera lineata Urban
Flowers orange. det. M. Arbo, 1988

MO, , , , . 8182 Rub. Diodia teres Walt. det. J. Dwyer 1976
Corolla ± white.

MO, , . 8183 Cyperac.

MO, , , . 8184 Gram. Arundinella deppeana Nees det. G.D. 1974
Clump.

MO, 7. 8185 ~~Paspalum~~ Thrasya " "

MO, 10. 8186 Aristida recurvata HBK " "

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Prov. Veraguas, Panamá
~~17PNV~~ 17PNV 028/118

MO, , , . 8187 Hymenaea courbaril L.
Large tree along highway on N side of San Francisco. "algarrobo". Fruit said to be edible.

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17 PNV 038-040/078-080
8188-8195 Roadsides & fencerows along Santiago-San Francisco road at bridge over Río Santa María, alt. 60 m.

MO, 6. 8188 Amphilophium paniculatum (L.) HBK. det. A.G. 1974
Vine in shrubs. Corolla yellow in bud, turning purple, then fading to white, never opening??

MO, , , . 8189 Helicteres guazumifolia HBK.
Shrub 3 m. tall, flowers red.

MO, MAD, , , 8190 Solanum pectinatum Dun. det. D'Arcy 1974
, , , . MADw 32506 ⓦ Three shrubs in roadside ditch with Eschaemum rugosum, Cyperus luzulae, etc. Corolla blue. Fruit light-dark green motted when young, bright yellow-orange when mature. None of the shrubs had fruit with basal protrubarances.

MO, 4. 8191 Eschaemum rugosum Salisb.
Roadside grassy ditch. ! G.D. 1974

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Prov. Veraguas, Panamá
17PNV 038-40/078-80

! A.G. 1974

MO. 8192 ~~Tabebuia~~ Godmania aesculifolia (HBK) Standl.
Tree 12 m. tall, 40 cm. dbh. Fruit green, conspicuously spiral.

MO, , , , . 8193 ~~Pachira~~ Bombacopsis sessilis (Benth.) Pitt.
Tree 10 m. tall, 30 cm. dbh with smooth flaky bark. Stamens white when opening, drying and tan in late afternoon when collected, style red.

MO, , , . 8194 Hymenaea courbaril L.
Tree 10 m. tall, ½ m. dbh., most leaves fallen.

MO, , , . 8195 Legume. Sesbania emerus (Aubl.) Urb.
Shrub 1½ m. tall. det. J. Dwyer

Nov. 19, 1973

Prov. Veraguas, Panamá
17PNU 022/945

8196–8197 Weedy roadsides in Santiago. alt. 90 m.

MO, . 8196 Poinsettia heterophylla (L.) Kl. + Gke. det. R.L. 1974
MO, WIS, , . 8197 Cleome pilosa Benth. det. H.H. Iltis, 1974
Petals, gynophore, ovary and filaments pale purple.

17PNU 067-070/902-5

8198–~~8208~~ 8262 Open weedy roadside and open to brushy "savanna" pasture, 2 Km. NW of Atalaya. alt. 100 m.

MO, , , . 8198 Dalea annua Dalea cliffortiana Willd. det. Barneby, 1981
Four petals blue, one white.
MO, 4. 8199 ? Cupania sylvatica Seem. det. T. Croat.
Clump of shrubs 4 m. tall. Flowers white, with musty odor.
MO, , . 8200 Cordia spinescens L.
Viny shrub to 4 m. Corolla white.
MO, , , . 8201 Lasiasis sorghoidea (Desv.) Hitchc. & Chase var. sorghoidea
To 2.5 m. tall. det. G.D. 1974
MO, . 8202 Paspalum plicatulum Mich. " "
MO, , , . 8203 Byrsonima crassifolia (L.) HBK. det. T. Croat, 1975
4 m. tall, 15 cm. diam. Fruit green.
MO, 4. 8204 Hyptis recurvata Poit. det. R.L. 1974
Corolla white with pale purple spots. Anthers purple.

Nov. 19, 1973

Prov. Veraguas, Panamá
17PNU 067-070/902-5

MO, 4. 8205 Curatella americana L. det. R.L. 1974
Flaky barked shrub 4 m. tall, 15 cm. diam. Flowers white, sweetly fragrant.

MO, , , . 8206 ~~Coutob~~ Coutoubea spicata Aubl.
Flowers white, tinged with purple, odor faint, sweet, something like that of Syringa vulgaris. det. J. Dwyer, 1975

MO. 8207 Anemia hirsuta (L.) Sw. det. D.B. Lellinger 1977

MO, , , . 8208 Scleria bracteata Cav.
~~8209~~ det. G. Davidse, 1975

8209–8215 Low spot in pasture.

MO, , . 8209 Ischaemum rugosum Salisb. ! G.D. 1974

MO, , , . 8210 Gentianac.
Flowers light purple, odorless.

MO, . 8211 ~~Panicum~~ Cyperus haspan L. det. G.D. 1974

MO, , , . 8212 Panicum Isachne polygonoides (Lam.) Doell.

MO, , , . 8213 Scroph. Bacopa monnierioides (Cham.) Robinson det. J.H. 1974
Aromatic.

MO, . 8214 Scroph. Scoparia dulcis L. det. J.H. 1974

MO, . 8215 Comp. Spilanthes diffusa Poepp. & Endl. det. R.L. 1976
Flowers yellow. det. J. Kuijt 1974

MO, , , . 8216 Loranth. Oryctanthus alveolatus (HBK.) Kuijt. ined. ssp. alveolatus
Parasitic shrub on Apeiba

MO, , , . 8217 Xylopia aromatica (Lam.) Eichl.
Small tree 6 m. tall, 10 cm. dbh. Common tree in area with conspicuous branching pattern. Det. R. Liesner, 1974

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Prov. Veraguas, Panamá
17P NU 067-70/902-5

MO, . 8218 ~~Tagetes~~ Pectis elongata HBK. var. oerstediana (Rydb.) Keil.
det. R.L. 1976
All scented herb. Flowers yellow.

MO, . 8219 Limnocharis flava (L.) Buch. ! R.L. 1977
In low spot in pasture. Flowers yellow.

MO, , , , . 8220 Malpigh. Banisteriopsis muricata (Cav.) Cuatrec.
Vine in ~~fence~~ fencerow. det. T. Croat, 1975

MO, , , . 8221 Lippia americana L. f. pilosa Mold. det. R.L. 1977
Shrub 2 m. tall. Flowers greenish white.

MO, . 8222 ~~Tabebuia~~ Godmania aesculifolia (HBK) Standl. ! A.G. 1974
Tree 8 m. tall. Fruit green, spiral.

MO. 8223 Cassia maxonii (Britt. + Rose) Schery det. R. Liesner 1975
Shrub 2 m. tall. Fruit green, hanging.

MO, , , . 8224 Rhynchanthera grandiflora (Aubl.) DC. det. R.L. 1974
Shrubs to 2 m. tall in marshy spot with slow ~~no~~ moving water. Viscid. Flowers odorless, all deep purple.

MO. 8225 Scleria secans (L.) Urb. det. G. Davidse, 1975
Forming tangles to 5 m. in shrubs.

MO, 6. 8226 Coccoloba lasseri Lundell det. R.L. 1974
Shrub 5 m. tall. Fruit green.

MO 8227? Octoblepharum
On shaded Curatella americana trunk.

MO, . 8228 Lab. Hyptis brachiata Brig. det. R.L. 1974
1 m. tall. Corolla white.

MO, , , . 8229 Comp. Baltimora recta L. det. R.L. 1976
Flowers yellow.

MO, 10. 8230 Hymenaea
Tree 8 m. tall, 40 cm. dbh. Many leaves shed.

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Prov. Veraguas, Panama
17PNU 067-70/902-5

? MO 8231 Aroid. Syngonium mauroanum Birdsey Bunt det. T. Croat 1978
Vine at 1.5 m. on Hymenaea courbaril #8230, stem dying away below. ~ 1982.

Spathe green outside, red within. Sap milky.

MO, 8. 8232 Gram. Rottboellia exaltata L.f. det. G.D. 1974
MO, 4. 8233 Dactyloctenium aegypticum (L.) Richt. " "
MO, , . 8234 Rub. Borreria densiflora DC. det. J.D. 1974
MO, , , , . 8235 Hyparrhenia rufa (Nees) Stapf det. G.D. 1974
Abundant both on roadside and in pasture.
MO, . 8236 Gram. Bothriochloa pertusa (L.) A. Camus " "
MO, , , . 8237 Anthephora hermaphrodita (L.) Ktze.! " "
MO, 7. 8238 Zornia reticulata Sm. det. R.L. 1975
MO, 9. 8239 Gram. Bouteloua americana (L.) Scribn. det. G.D. 1974
Prostrate.
MO, , . 8240 Malv. Sida linifolia Juss. det. R.L. 1974
MO, , . 8241 Scoparia dulcis L. det. J.H. 1974.
Petals greenish white, purple at base.
MO. 8242 Paspalum paniculatum L. det. G.D. 1974
MO, , , , , . 8243 Rub. Borreria densiflora DC. det. J.D. 1974
Corolla white.
MO, 6. 8244 Legume. Stylosanthes humilis HBK det. R.L. 1974
Forming flat mat.

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Prov. Veraguas, Panamá
17PNU 067-70/902-5

MO, , . 8245 Cassia tora L. det. R. Liesner, 197-

MO, , , . 8246 Digitaria Axonopus compressus (Sw.) Beauv. det. G. D. 1974
Creeping, rooting at nodes.

MO. 8247 Digitaria ciliaris (Retz.) Koel. " "

MO, . 8248 Eleusine indica (L.) Gaertn. " "

MO, , . 8249 Cyperac. Lipocarpha maculata (Michx.) Torr.
Wet spots on roadside. det. G. Davidse, 1975

MO, , , . 8250 Malv. Sida glutinosa Commers.? det. R. L. 1974
Petals white, stamens bright yellow.

MO, 7. 8251 ~~Desmodium~~ Aeschynomene americana L. det. R. L.
Flowers salmon.

MO, , , , . 8252 Mimosa panamensis (Benth.) Standl. det. R. L. 1974
heads pink.

MO, . 8253 Acanth. Aphelandra deppeana det. L. H. Durkee 1977
2 m. tall, in thicket. Flowers pink.

MO, , , . 8254 Piper marginatum Jacq. det. J. Conrad 1974
Spikes arching. In thicket.

F, , . 8255 hepat.
Covering shady clay bank.

MO, , . 8256 Dicranopteris (Schrad.) Underw.
Shady clay bank.

MO, . 8257 Pityogramma tartarea (Cav.) Maxon det. D. B. Lellinger 1977
Shady clay bank.

MO, , , . 8258 ~~Malv.~~ Waltheria glomerata Presl
Shrub to 2 m. Corolla white.

MO, . 8259 Cyperac. Rhynchospora brevirostris
wet ditch. det. W. W. Thomas

MO. 8260 Chamaesyce hyssopifolia (L.) Small det. R. L. 1976

Nov. 19, 1973

Prov. Veraguas, Panamá
17 PNU 067-70/902-5

MO 8261 Cyperac. Rhynchospora exima (Nees) Boeck.
Low spot. mixed with R. brevirostris.

MO, , , . 8262 Eleocharis filiculmis Kunth
Low spot. det. g. Davidse, 1975

8263-8267 At 0-2 m. on trunk of Erythrina
8023.

US. 8263 lichen Physcia
US. 8264 " " Dirinaria
US. 8265 " " Lecanora
US, . 8266 " " Lecanora
US. 8267 graphid.

Nov. 21, 1973

Canal Zone, Panamá
17PPA 483-5/019-021
8268-8286 Summit Garden. alt. 80 m.

MO 8268 moss.
On horizontal portion of old cement wall.
US, , . 8269 lichen ~~crust~~ Chiodecton
At 1-1.5 m. on 20cm. diam. cult. Crescentia

8270-8278 At 0.5-2 m. from ground on stubs of leaf bases on trunk of palm (Phoenix?).
US, . 8270 lichen Crocynia
US. 8271 " "
US. 8272 " " Pyxine
US. 8273 " " Lepraria
US. 8274 " "
US. 8275 " " Pyrenulaceae
F. 8276 hepat.
F. 8277 " "
F. 8278 " "

8279-8286 On rotting trunk of small dead cult. palm.
US. 8279 lichen
US. 8280 " " Graphid.
US. 8281 " " sterile crust.
US, . 8282 " " sterile crust.
8283 " "
US, . 8284 " " Graphid.
US. 8285 " " crust.
US, . 8286 " " Graphid.

Nov. 22, 1973

Canal Zone, Panamá
17PPA 489/023

8287-8288 Cultivated in Summit Garden. Alt. 80 m.

MO, 6. 8287 Legume. Tetrapleura tetraptera (Schum. & Thonn.) Taub. det R. L. 1974
Tree 8 m. tall, ½ m. dbh. Fruit green.

MO, 29. 8288 Bamboo. Bambusa multiplex (Lour.) Raeuschel det. T. R. Soderstrom 1974
Dense clump 5 m. tall, the arching stems to 8 m. long. ~~Abundantly flow~~ With abundant spikelets but few open florets seen. Anthers 7 mm. long, very pale greenish white in the furrows, mostly purple (somewhat irregularly ~~spotted~~ spotted and striped) on the angles. Stigma mostly purple or white with a tinge of purple.

"Your 8288 may be the Asiatic bamboo that is used in hedges throughout the tropics, Bambusa multiplex (Loureiro) Raeuschel [this is often listed as Bambusa glaucescens]. This bamboo reaches the size that you gave, but is often kept trimmed and becomes very dense and forms a good hedge. It flowers often--usually some flowers can be found, so it is not of the same importance in this case as the other two bamboos that you sent."

part of letter from Thomas R. Soderstrom, March 29, 1974.

 Nov. 23, 1973

8289-8307 - see p. 260-261

Prov. Panamá, Panamá
17PPV 630/960

8308-8331 Much disturbed patch of woods along Río Matasnillo, Domingo Díaz, Panama City. alt. 15 m.

8308-8317 On trunk and branches of Inga, small tree 25 cm. diam.

US. 8308 graphid.
US. 8309 lichen Pyrenocarp.
US. 8310 " " crust.
US. 8311 " " crust.
US, . 8312 Graphid.
US, , . 8313 " "
US, , . 8314 " "
US. 8315 lichen crust.
US. 8316 " " Dirinaria
US, . 8317 " " Pyxine

8318-8319 On shrub.

US. 8318 Graphid.
US. 8319 lichen. Chiodecton

8320-8323 On epiphyte roots appressed to trunk of large tree, 1-3 m. from ground.

MO. 8320 ? Octoblepharum
US. 8321 lichen Lepraria
US. 8322 " "
US, . 8323 " " crust.

Nov. 23, 1973

Prov. Panamá, Panamá
17PPU 630/960

US, . 8324 lichen crust
On buttresses of large Ficus.

8325-8331 at 0-3 m. from ground on large Anacardium excelsum trunks.

US, . 8325 lichen Pyrenocarp.
US, . 8326 " " crust.
US, . 8327 " " crust.
US, . 8328 " " Leptogium
US. 8329 Graphid
US, , , . 8330 lichen crust.
US, . 8331 hepat.

Nov. 23, 1973

Prov. Panamá, Panamá
17PPA 589/071

8289-8307 Weedy roadside and heavily disturbed slope along Carretera Transístmica at the continental divide, Alcalde Díaz. alt. 190 m.

MO, , , , , , , . 8289 Legume. Dioclea guianensis Benth. det. R.L. 1974
Vine covering small tree. Inflorescences erect, flowers visited by hummingbirds, odorless, light purple with yellowish area at base of standard.

MO, 5. 8290 Pennisetum purpureum Schumach. det. G.D. 1974
To 2 m. tall, forming thickets.

MO, 6. 8291 Echinochloa colonum (L.) Link ! " "

MO, 6. 8292 Eleusine indica (L.) Gaertn ! " "

MO, . 8293 Chamaesyce hirta (L.) Millsp. ! R.L. 1976

MO, . 8294 Chamaesyce hyssopifolia (L.) Small det. R.L. 1976

MO, , , , . 8295 Digitaria ciliaris (Retz.) Koel. det. G.D. 1974

8296 [missing]

MO, , , , , , . 8297 Mucuna mutisiana (HBK) DC. det. R.L. 1974
Vine covering tree, with abundant pendant branches and peduncles. Peduncles to 1.5 m. long, bristles of fruit reddish brown.

MO, 4. 8298 Pothomorphe peltata (L.) Miq. det. J. Conrad 1974
1.5 m. tall.

MO, , , , , , . 8299 Eclipta alba (L.) Hassk. det. R.L. 1976
rays white.

MO, , , , . 8300 Solanum (§ Torvum) ochraceo-ferrugineum (Dun.) Fern.
Shrub 2.5 m. tall. Corolla white. det. D'Arcy 1974

Nov. 23, 1973

Prov. Panamá, Panamá
17PPA 589/071

MO, , , . 8301 Hyparrhenia rufa (Nees) Stapf det. G.D. 1974
common.

MO, , , , . 8302 Zornia reticulata Sm. det. M. Dillon
prostrate.

MO, 4. 8303 Gram. Rottboellia exaltata L.f. det. G.D. 1974

MO, . 8304 Cucurb. Anguria warscewiczii Hook
Vine hanging out of shrubs. Fruit light and dark green striped, petals orange. (= Psiguria W. (Hook f.) Wunderlin det.

MO. 8305 Eryngium foetidum L. ! M. Mathias 1974

MO. 8306 Sorghum bicolor (L.) Moench. det. G.D. 1974
Single plant seen.

MO, 4. 8307 Paspalum virgatum L. " "

 Nov. 24, 1973

~~8308-8347~~ # 8308-8331 - see p. 258-259.

Canal Zone, Panamá
17PPA 435/077

8332-8348 Secondary tropical moist forest near Chagres River on SE side of Gamboa. alt. 30 m.

MO 8332 moss
on rotten log.

US, , . 8333 lichen Pyrenocarp.
at 1 m. on tree trunk.

US, . 8334 lichen graphid.
at 2 m. on tree trunk.

US, . 8335 lichen Graphid.
at 2 m. on tree trunk.

US, , . 8336 lichen
at 1 m. on tree trunk.

8337-8343 On 15 cm. dbh. tree.

US, . 8337 lichen.
½-1 m.

US, . 8338 lichen Graphid.
1 m.

US, . 8339 lichen Graphid.
½ m.

US, . 8340 lichen Graphid.
1½ m.

US. 8341 lichen Graphid.
1½ m.

US, , . 8342 lichen Sarcographa
1½ m.

US. 8343 lichen graphid.
1½ m.

Nov. 24, 1973

Canal Zone, Panamá
17PPA 435/077

8344-8348 on 45 cm. dbh. rough barked tree.

US. 8344 lichen Pyrenocarp.
1½ m

US, , . 8345 Graphid.
½ - 2 m.

US, . 8346 lichen Pyrenocarp.
1½ m.

US. 8347 lichen
1½ m.

US. 8348 lichen crust.
1½ m.

~~8349~~

8349-8351 On ½ m. dbh. hard rough barked tree in open, SE side of Gamboa. alt. 40 m.

US, . 8349 lichen

US, . 8350 lichen Pirinaria picta

US. 8351 Graphid

17PPA 426/079

8352-8358 at 2-4 m. from ground on 70 cm. dbh. cult. Swietenia near post office, Gamboa. alt. 30 m.

US. 8352 lichen Lecanora

US. 8353 Graphid.

US. 8354 lichen Chiodecton

US, . 8355 lichen crust.

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Canal Zone, Panamá

17PPA 426/079

US.	8356	lichen crust.
US, .	8357	" "
US, 12.	8358	" " Dirinaria

17PPA 442-4/069-070

8359-8378 0 - 2.5 m. from ground on cultivated Swietenia trees along Gaillard Hwy. at Canal Zone Penitentiary, 2 Km. SE of Gamboa. alt. 50 m.

US, 5.	8359	lichen crust.
US, .	8360	" " crust.
US.	8361	" " Caloplaca
US, .	8362	" " Pyrenocarp.
US, .	8363	" " Pyrenocarp.
US, , .	8364	" " Pyrenocarp.
US, , .	8365	" " Dirinaria
US, 15.	8366	" " crust.
US, .	8367	lichen crust.
US.	8368	lichen
US.	8369	" "
US.	8370	" "
US.	8371	" " graphid.
US.	8372	" " graphid.
US.	8373	" " graphid.
US.	8374	" "
US.	8375	" " graphid.

Nov. 24, 1973

Canal Zone, Panamá

17PPA 442-4/069-070

US, . 8376 lichen graphid.

US, 5. 8377 lichen graphid.

F, , , . 8378 hepat

17PPA 472/035

MO 8379 moss.

On open clay & recently bulldozed area along Gaillard Hwy, 2 km. NW of Summit Garden. alt. 100 m.

17PPA 478/025

8380-8381 Open rock outcrop along RR, ½ km. W of Summit Garden. alt. 80 m.

US, 9. 8380 lichen

US, 5. 8381 lichen

Nov. 25, 1973

Canal Zone, Panamá

17PPA 483/021

MO, 27. 8382 Chamaesyce densiflora (Kl. & Gre.) Millsp. Prostrate herb. With Ch. hirta, Ch. hyssopifolia in open gravel of RR crossing, Summit Garden, alt. 80 m. det. R.L. 1976

17PPA 481/019

8383-8384 Secondary tropical moist forest with many Bustavia superba, 1/4 km. SW of Summit Garden. alt. 70 m.

MO. 8383 moss. On rock.

8384 hepat. on rock.

17PPA 478/022

MO, 8385 moss. partly shaded clay roadside bank, 1/2 km. W of Summit Garden. alt. 70 m.

17PPA 484/020

8386-8387 Seldom mowed part of lawn, Summit Garden. alt. 80 m.

MO, 6. 8386 Gram. Ischaemum ~~rugosum~~ indicum (Houtt.) Merrill det. G.D. 1974

MO, 8. 8387 Gram. Polytrias amura (Buse) O. Ktze. " "

Nov. 26, 1973

Canal Zone, Panamá
17PPA 472/035

8388-8421 Secondary tropical moist forest along Gaillard Hwy, 2 km. NW of Summit Garden. alt. 100 m.

! R.L. 1974

MO, MAD, 26. 8388 Trichospermum mexicanum (DC.) Baill.
MADw 32507 (W) Tree 17 m. tall, 25 cm. dbh, wood soft. Flowers with pleasant light fragrance, petals blue-purple, sepals pink purple on outside, lighter within, ends of stamens same color as petals.

8389-8421 on Trichospermum mexicanum # 8388

US. 8389 lichen crust.
3 m.

US. 8390 lichen crust.
4.5 m.

US. 8391 lichen Sarcographa
4.5 m.

8392 lichen
4.5 m.

8393-8396. at 6 m.

US, 8393 lichen crust.
US. 8394 Graphid
US, 8395 Graphid Sarcographa
US. 8396 lichen

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Nov. 26, 1973

Canal Zone, Panamá
17PPA 472/035

8397-8402 at 8 m.

F. 8397 hepat.
US. 8398 lichen
US. 8399 " " graphid.
US. 8400 " "
US. 8401 ?lichen
Rare. Apothecia bright orange.
US. 8402 Graphid.

8403-8407 at 9 m.

US. 8403 lichen graphid
US. 8404 " "
US. 8405 " " graphid.
US, 8406 " " Sarcographa
US, 8407 " " Pyrenocarp.

8408-8411 at 11 m.

F. 8408 hepat.
US. 8409 Graphid
US. 8410 " "
US. 8411 " "

8412-8421. At 12-15 m. on upper branches.

US. 8412 lichen
US. 8413 Graphid
US. 8414 lichen Pyrenocarp.
US, 8415 Graphid
US. 8416 lichen
US. 8417 " "

Nov. 26, 1973

Canal Zone, Panamá
17 PPA 472/035

US. 8418 graphid.
US. 8419 lichen
US, . 8420 lichen
F. 8421 hepat.

Nov. 27, 1973

Canal Zone, Panamá
17PPV 598/907

F, , . 8422 hepat.
Shaded base of large cult. Roystonea near Gorgas Hospital, Ancón. alt. 30 m.

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17 PPV 543/961
US, , . 8423 lichen
Weathered rock outcrop along Gaillard Hwy, 1 Km. NW of Fort Clayton. alt. 20 m.

Nov. 28, 1973

Canal Zone, Panamá
17PPV 596/907

8424-8428 Shady lawn near Gorgas Hospital, Ancón. alt. 40 m.

MO, 8424 moss. Leucobryaceae.
Mass of Roystonea roots on slope.

MO, 8425 moss
mass of Roystonea roots on slope.

MO, 8426 moss
On rocks.

F. 8427 hepat
cement wall.

MO, 8428 moss
tree root.

17PPA 372/139

MO. 8429 Adenocalymna arthropetiolatum A. Gentry ! A.G. 1974
Flowers fallen to ground. Yellow, now odorless. Rocky Aechmea magdalenae patch above gorge of Río Mendosa, 1/2 km. upstream from Pipeline Road bridge, 8 km. NW of Gamboa. alt. 100 m. Type locality.

Nov. 28, 1973

Canal Zone, Panamá
17PPA 370/135

8430-8431 Pipeline Road bridge over Río Mendosa, 8 Km. NW of Bamboa. alt. 100 m. Premontane wet forest.

MO, MAD, 11. 8430 Pavonia dasypetala Turcz. ! R.L. 1974
MADw 32508 (w) Shrub 2 m. tall at edge of forest. Common. Flowers odorless, rose color.

MO. 8431 Scroph.
Grassy roadside. Flowers yellow.

17PPA 368/132

8432-8439 ~~Tropical moist~~ Premontane wet forest along Pipeline Road, 8 Km. NW of Bamboa. alt. 125 m.

MO, 9. 8432 Gouania ~~lupuloides (L.) Urb.~~ polygama (Jacq.) Urban ~~det. 1974~~
Vine to 8 m. in trees at edge of forest. Flowers pale greenish.

MO, MAD, , , . 8433 Rub. Psychotria racemosa Sw. det. J.D. 1974
MADw 32509 (w) Shrub 1½ m. tall. Fruit bright orange.

MO, GH, PMA US, . 8434 Socratea durissima (Mart. Oerst.) Wendl.
Palm 14 m. tall, 15 cm. diam., on stilt roots with sharp spines. Crownshaft 1.35 m. long, bulging at base, petiole 30 cm. long, blade ca. 2.25 m. long. Three hanging inflorescences ca. 1 m. long from the three leaf axils below the lowest leaf.

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Canal Zone, Panamá

17PPA 368/132

Ardisia bartlettii Lundell, det. Lundell

MO, 6. 8435 Myrsin. Graphardisia bartlettii (Lundell) Lundell 1978
Shrub 2 m. tall on brushy roadside bank. Inflorescence and corolla pale purple, stamens yellow. Corolla detached when collected at 5:00 P.M. and hanging from the style. det Lundell, 1984.

8436-8439 at ca. 8-10 m from the ground on trunk of Socratea durissima # 8434.

US, . 8436 lichen
US. 8437 lichen
US. 8438 lichen
F. 8439 hepat.

17PPA 370/135

8440-8445 At 0.5-2 m. on 1 m. dbh. Anacardium excelsum at edge of tropical moist forest at Río Mendosa bridge, Pipeline Road, 8 Km. NW of Gamboa. alt. 100 m.

MO, 8440 moss
F, . 8441 ~~moss?~~ hepat.
F, . 8442 hepat.
US. 8443 lichen
US. 8444 lichen
US, . 8445 lichen crust.

Nov. 29, 1973

Canal Zone, Panamá

17PPV 559/942

8446-8451 Along Gaillard Hwy at SE edge of Fort Clayton. alt. 10 m.

US, , , . 8446 lichen at 1 m. on 50 cm. dbh. cult. Swietenia.

8447-8451 at 0-2 m. on 60 cm. dbh. cult. Swietenia.

US, . 8447 lichen

US, . 8448 " "

US. 8449 " "

US. 8450 " "

US, 6. 8451 " "

17PPV 540/965-6

8452-8462, 8475-8476 Along road to pistol range, 1.5 km. SE of Pedro Miguel. alt. 20 m.

8452-8453 On 10-30 cm. diam. trunks of cult. Tectona grandis. Few lichens can colonize the soft flaky bark.

US, 6. 8452 lichen crust. Common.

US. 8453 lichen

8454-8459, 8475 ~~8460~~ at 0-2 m. from ground on trunk of Mangifera indica in thicket along lake.

US. 8454 lichen graphid.

 Nov. 29, 1973

Canal Zone, Panamá
17PPV 540/965-6

US. 8455 lichen graphid.
US. 8456 " " graphid.
US. 8457 " "
US. 8458 " "
US. 8459 " "
US, . 8475 " "

US, . 8476 lichen
heavily weathered rock outcrop along road.

MO, 9. 8460 Boerhaavia diffusa L. det. R. Liesner, 197_
Roadside. Flowering branches viscid. Flowers purple.
MO, 5. 8461 Gram. Bothriochloa pertusa (L.) A. Camus det. G.D. 1974
lawn.
MO. 8462 Poinsettia heterophylla (L.) Kl. & Gke. det. R.L. 1974
Brushy roadside bank.

17PPV 510/984

8463-8469 On 1 m. dbh. cult. mimosoid tree (~~Pithecolobium saman~~?)
in open, Paraíso. At. 0-2 m. from ground. alt.
alt. 50 m. The tree Coll. April 9, 1974 sub # 11133

US, . 8463 lichen
US. 8464 " "
US, , . 8465 " "
US, 5. 8466 " "
US, 9. 8467 Graphid
US, 5. 8468 lichen
US, , . 8469 " "

Nov. 29, 1973

Canal Zone, Panamá
17PPA 450/055

MO, 26. 8470 *Inga sapindoides* Willd. det. R. L. 1974
~~Seen~~ Shrub 6 m. tall with several stems to 10 cm. diam. Edge of secondary tropical moist forest along Gaillard Hwy., 3 km. SE of Gamboa. alt. 60 m. Flowers with faint fragrance, something like that of *Trifolium repens*. Corolla green, filaments white, anthers yellowish green. Filaments turning light tan then brown as dying. Same shrub coll. in fruit Feb. 8, 1974 mb #9563.

8471–8474 On trunk & branches of *Inga* #8470/9563

F. 8471 hepat.
US. 8472 lichen
US, , . 8473 lichen crust.
US, , . 8474 Graphid

Nov. 30, 1973

8475-8476 see p. 274.

Canal Zone, Panamá
17 PPA 423/089

8477-8541 Summit of Cerro Pelado, 1 km. N of Gamboa.
Secondary tropical moist forest. alt. 200-220 m.

MO, 6. 8477 ? Perebea xanthochyma Karst.
Tree 10 m. tall, 15 cm. dbh with pale tan latex.
♀ inflorescences odorless, bracts pale tan and green,
stigmas white det. J. Conrad, 1975

8478-8481 On #8477

US, , , . 8478 lichen
2 m.

US, . 8479 lichen
2 m.

US, . 8480 lichen
½ m.

US, . 8481 lichen
0-½ m.

8482-8484 On 30 cm. dbh. Hymenaea courbaril.
Bark hard, difficult to collect from.

F, , , . 8482 hepat.
1 m. common.

US. 8483 lichen
patches to 35 cm. diam. or more. ~~[illegible]~~ 1 m.

US. 8484 lichen
1.5 m.

Nov. 30, 1973

Canal Zone, Panamá
17PPA 423/089

8485-8486 Clearing for radar station at top.

MO, 9. 8485 Panicum haenkeanum Presl edge of forest. det. G.D.

MO, 9. 8486 Hyparrhenia rufa (Nees) Stapf. det. G.D. 1974 ~~Common~~ common.

MO, 8487 moss rotten stump.

MO, MAD, 16. 8488 Henrietella fascicularis (Sw.) Triana det. R.L. 1974
MADw 32510 (w) Shrub 8 m. tall, 10 cm. dbh. Corolla white.

8489-8541 On Henrietella #8488.

MO, 8489 moss. 1/2 m.

8490-8493 at 1.5 m.

US. 8490 lichen

US. 8491 " " sarcographa

US, . 8492 " "

F, . 8493 hepat.

8494-8497 at 2 m.

US. 8494 graphid

US. 8495 " "

US. 8496 lichen

F, . 8497 hepat.

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Canal Zone, Panamá
17PPA 423/089

8498-8505 at 2.5 m.

US. 8498 lichen graphid.
US. 8499 lichen
F, 8500 hepat
US. 8501 lichen
US. 8502 graphid
US, 8503 " " Sarcographa
US. 8504 " "
US. 8505 lichen

8506-8510 at 3 m.

US. 8506 lichen
US. 8507 graphid
F. 8508 hepat.
US. 8509 lichen
US, 8510 lichen

8511-8517 at 3.5 m.

US. 8511 lichen graphid.
US. 8512 graphid
US. 8513 lichen
F. 8514 hepat.
US. 8515 lichen
US. 8516 " "
US. 8517 " " Sarcographa

8518-8522 at 5 m.

US. 8518 lichen

Nov. 30, 1973

Canal Zone, Panamá

17PPA 423/089

F.	8519	hepat.
US.	8520	lichen graphid.
US.	8521	" " graphid.
US, , . 3.	8522	" "
		8523-8529 at 6 m.
US.	8523	lichen graphid.
US.	8524	" "
US.	8525	" "
US.	8526	" "
US.	8527	" "
US.	8528	" " graphid.
F.	8529	hepat
		8530-8533 at 6.5 m.
US.	8530	lichen
US.	8531	graphid
US.	8532	" "
US.	8533	lichen
		8534-8541 at 7-8 m. on upper branches.
US.	8534	lichen
US.	8535	" "
F.	8536	hepat.
US.	8537	lichen
US.	8538	" "
US, .	8539	" " Graphid.
US.	8540	graphid
US, , .	8541	" " Graphid

mixed collection.

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Canal Zone, Panamá
17PPA 420/085

8 542-8550 Secondary tropical moist forest along road to radar station on Cerro Pelado, ½ km. NW of Bamboa alt. 100 m.

MO, 6. 8542 Ischaemum indicum (Houtt.) Merrill det. G.D. 1974
Open gravel of roadside.

MO, 8. 8543 Trichospermum mexicanum (DC.) Baill. ! R.L. 1974
Shrub 6 m. tall, 8 cm. dbh. Common in places. Leaves distichous, hanging, inflorescence ascending. Flowers lightly fragrant, petals blue, sepals pink on outside, very pink within, stamens pink distally.

8544-8550 at 0.5-2 m. on Trichospermum mexicanum #8543.

US, . 8544 lichen graphid.
US. 8545 " " graphid.
US. 8546 " "
US. 8547 " " graphid.
US. 8548 " "
US, , . 8549 " "
US, , . 8550 " " Sarcographa

Dec. 1, 1973

Prov. Panamá, Panamá
17 PPA 589-590/047-9

8551-8610 Vicinity of television tower on ridge (± Cerro Peñón), 3 km. S of Alcalde Díaz. alt. 410-440 m.

8551-8574 Disturbed second growth tropical moist forest.

MO, , . 8551 Apeiba tibourbou Aubl. det. R.L. 1974
5 m. tall, 20 cm. dbh. Petals yellow. Flowers with ~~heavy~~ heavy sweet odor.

MO, , , , , , , . 8552 Solanum hayesii Fern. ! D'Arcy 1974
Small tree 6 m. tall, 15 cm. dbh. with thorns on trunk. Corolla white, ~~with~~ flowers with heavy sweet odor.

MO, 6. 8553 Trichospermum mexicanum (DC.) Baill. ! R.L. 1974
Tree 7 m. tall, 6 cm. dbh. Flowers fragrant, petals purple, ~~sep~~ sepals pink-purple. Common.

MO, . 8554 Heliconia mariae
Giant herb 5 m. tall. Leaf blades to ca. 1.65 m. long. Inflorescence red, pendant, flowers red.

MO, . 8555 Heliconia latispatha Benth. det. A.H. Gentry
Herb 1.5 m. tall. Bracts orange.

MO, , , . 8556 Witheringia asterotricha L. Her. det. D'Arcy 1974
1.5 m. tall. Corolla lobes greenish yellow. Fruit turning bright orange.

MO, . 8557 Aschnosiphon pruinosus (Reg.) Peters
Herbs 2 m. tall. Leaves purple beneath.
! H. Kennedy 1974

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17PPA 589-91/047-9

MO. 8558 Croton panamensis (Kl.) Muell.-Arg. det. R.L. 1974
Shrub 2 m. tall.

MO, 7. 8559 Dalechampia dioscoreaefolia Poepp. + Endl. ! R.L. 1974
Vine to 4 m. in shrubs. Bracts ± white with light purple veins. Gland shiny, sticky, purple. ♂ flowers purple, ♀ flowers green.

MO. 8560 Drymonia serrulata (Jacq.) Mart. det. L. Skog 1977
Vine to 2 m. Corolla with dark purple areas. Flowers odorless.

MO, , . 8561 Menisperm. Cissampelos pareira L.
Vine to 1.5 m. det. R. Barneby, 1983

MO. 8562 Cissus sicyoides L. det. T. Croat, 1975
Vine. Flowers greenish.

MO, 4. 8563 Pouzolzia obliqua Gaud. det. R.L. 1974
Scrambling shrub.

MO, , , , . 8564 Convolv. Ipomoea lindenii Mart. + Gal. det. D.F. Austin 1974
Vine in shrubs. Corolla green with dark purple on lobes, anthers and stigma white. Odorless.

MO, . 8565 Ochroma pyramidale (Lam.) Urb.
Tree 8 m. tall. det. A. Gentry, 1975

MO, . 8566 Anthurium tetragonum Schott
Acaulescent from root mass, sitting on boulder. ~~Leaves to~~ Leaf blade 1.8 m. long.
det. T. Croat, 1975

Dec. 1, 1973

Prov. Panamá, Panamá
17PPA 589-91/047-9

MO, , , , . 8567 Acanth. Chaetochlamys panamensis det. L. H. Durkee 1977
Shrublet 1 m. tall. Flowers purple.

MO, , , , . 8568 Banisteriopsis muricata (Cav.) Cuatrec.
Vine to 6 m. Wings red. det. T. Croat.

MO, 5. 8569 ~~Cactus~~ Epiphyllum phyllanthus (L.) Haw. 1977
Epiphyte. Stems hanging, several from base attached to branch. det. H. Bravo & L. Sheinvar, 1985

MO, 7. 8570 Essenbeckia alata (Karst. + Triana) Triana + Planch.
Tree 10 m tall. Another seen in the open twice as tall and 45 cm. dbh. with bark with irregular flakes. Fruit green, with very strong resinous odor. Several in area. det. T. Elias 1979

MO, , . 8571 Palm. ~~Cha~~ Crysophila warscewiczii (H. Wendl.) Barth.
4 m. tall, 10 cm. diam. Middle part of stem with downward pointing spines with few branches, lower ~~bot~~ part of stem formidably armed with tangled branched upward growing spines. The armature varies among different individuals, some having only downward pointing (and branched) spines, others with nearly spineless areas. About 16 expanded green leaves and 8 dead ones hanging below. Petioles variable in length, 0.8-1.25 m. long, the base split, the leafy part of the stem with much fibrous material. Inflorescences spreading, from lower living leaves. det. R. J. Evans, 1993

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17PPA 589-91/047-9

MO, , , . 8572 Anthurium clavigerum Schott
Vine appressed to Chrysophilum palm, to 5m.
Peduncle ± horizontal with spathe
spreading or erect, spadix
hanging. det. T. Croat, 1975

MO, , . 8573 Comp. Wedelia calycina L.C. Rich. det. R.L. 1976
Viney. Rays & disc yellow.

MO, 7. 8574 Sapind. Serjania rhombea Radlk. det. T.C. 1974
Vine on shrubs and trees. Petals white, with
sharp sweet but not really pleasant odor.

8575-8581 On open rock outcrops.

MO, . 8575 Cactus Hylocereus polyrhizus (Web.) Br. & Ros.
Creeping. det. H. Bravo & L. Scheinvar, 1985
Crosssect. 3cm ×1 #8575

MO, , . 8576 Lab. Salvia lyptoides Mart. & Gal.
Corolla blue. det. R.L. 1974

MO. 8577 ? Bryum

MO, , . 8578 Gram. Oplismenus burmannii (Retz.) Beauv. det. G.D. 1974

MO, , . 8579 Melastome. Schwackea cupheoides (Benth.) Cogn. det. R.L. 1974
Herb ½ m. tall. Corolla pale purple.

? 8580 Amaranth.

MO, , . 8581 Physalis
Corolla yellow with purple-brown spots.
Anthers blue-green.

Dec. 1, 1973

Prov. Panamá, Panamá
17 PPA 589-91/047-9

8582-8592 Open grassy, rocky roadside.

MO, 8582 Bryum

MO, 6. 8583 Hyparrhenia rufa (Nees) Stapf. det. G.D. 1974
common.

MO, , , . 8584 Erechtites hieracifolia (L.) Raf. var. cacalioides (Fisch. ex Spreng.) Griseb.
det. T.M. Barkley 1976

MO, , , . 8585 Comp. Elvira biflora (L.) Ktze. = Delilea biflora (L.) Ktze
det. R.L. 1976

MO, , , . 8586 Solanum aff. nigrescens Mart. & Gal. det. D'Arcy, 1974.
0.75 m. tall. Corolla white.

MO, , . 8587 Gram. Bothriochloa bladhii (Retz.) S.T. Blake det. G.D. 1974

MO, . 8588 Chaptalia nutans (L.) Polak. ! R.L. 1976
Rays light purple.

MO, , , . 8589 Asclepias curassavica L. ! D. Spellman 1973
Corolla dark orange, corona light orange.
Visited by butterflies.

MO. 8590 Chamaesyce hypericifolia (L.) Small det. R.L. 1976

MO, , , . 8591 Rub. Hemidiodia ocymifolia (Willd.) Schum. det. J.D. 1974
Corolla white.

MO, , . 8592 Paspalum plicatulum Michx. det. G.D. 1974

8593-8599 Disturbed second growth tropical moist forest.

MO, MAD, , , 8593 Solanum extensum Bitt. det. D'Arcy 1974

, . MADw 32511 ⊗ Weak stemmed shrub 3 m. tall.
Corolla white.

MO, , , , 8594 Solanum asperum Vahl ! D'Arcy 1974
, , , , , Shrub 4 m. tall. Corolla white, fruit
, . green.

 Dec. 1, 1973

Prov. Panamá, Panamá
17PPA 589-91/047-9

MO, 5. 8595 Panicum trichoides Sw. det. G.D. 1974

MO, . 8596 Begonia guaduensis HBK. det. K. Burt-Utley 1976
Flowers white, stigmas bright yellow.

MO, , . 8597 Convolv. Ipomoea miranding (Pittier) O'Don. det. D.F. Austin 1974
Corolla rich purple, odorless. Vine.
Stamens light purple, style white.

MO, , , , . 8598 Gesner. Kohleria tubiflora (Cav.) Hanst. ! L.E. Skog 1977
Corolla bright orange. Leaves purple beneath.

MO, 5. 8599 Adiantum concinnum Willd.
det. D.B. Lellinger 1977

8600-8605 at 0-2 m. on 45 cm. dbh. tree in open
of same species as # 8570.

F. 8600 hepat.

F, . 8601 hepat.

US, . 8602 lichen

US. 8603 " "

US. 8604 " "

US. 8605 Graphid.

8606-8610 On open rock outcrops.

US. 8606 lichen

US, , , . 8607 " "

US. 8608 " "

US, . 8609 " "

US. 8610 " "

Dec. 3, 1973

Canal Zone, Panamá
17PPA 471/ ~~[illegible]~~ 035

MO, 32. 8611 *Inga sapindoides* Willd. det. R.L. 1974
Tree 8 m. tall, 15 cm. ~~[illegible]~~ diam. in secondary tropical moist forest between Gaillard Hwy. and RR. Flowers musty fragrant, visited by hummingbirds, fully expanded when collected (5:30 P.M.). Filaments white, anthers yellowish green. 2 km. NW of Summit Garden. alt. 90 m.
Same tree coll. in fruit March 1, 1974 sub #10210.

Dec. 4, 1973

Canal Zone, Panamá
17PPA 104-117/181-186

8612-8614 Premontane wet forest along Río Providencia, 3 Km. SE of Achiote. alt. 5-100 m.

MO. 8612 moss.
MO. 8613 moss
F, 4. 8614 hepat.

The vascular ones collected here are under Gentry & Nee 8636-8666.

I was going out with Al Gentry to the army Tropical Test Center locations he was studying this week. As our collection numbers by coincidence were within 25 numbers of each other, we at first used Gentry and Nee numbers and then eventually by Dec. 6 I used some Nee & Gentry and then on Dec. 8 I used Nee & Gentry numbers for the ones I picked up & Al used Gentry and Nee for what he picked up as we walked along.

17PPA 173/242

8615-8617 Vicinity of Gatún Dam., alt. 10 m.

US, , . 8615 Ramalina
On cult. Roystonea
US. 8616 Parmelia
On cult. Roystonea.
US. 8617 lichen.
on hanging adventitious roots of cult. Ficus cf. nitida.

Dec. 5, 1973

Canal Zone, Panamá
17PPA 104-107/175-181
F. 8618 hepat.
Premontane wet forest along Río Providencia, 3 km. SE of Achiote, alt. 5-100 m.

While Al was in the forest, I collected some stuff, Gentry & Nee 8667-8689 and what Al picked up went under more Gentry & Nee #'s. The notes for what I picked are in my field notebook #21.

Dec. 6, 1973

Canal Zone, Panamá
17PPA 077-081/276-8

8619-8632 ~~Premontane~~ Tropical- wet forest around towers on Loma La Toba, 3 km. SW of mouth of Chagres River. alt. 50-75 m.

MO, , , . 8619 Virola sebifera Aubl. det. A.G. 1974
Tree ~~20m~~ 9 m. tall, 20 cm. dbh.

MO, . 8620 ?~~Surubia~~ Souroubea sympetala Gilg det. J. Utley 1976
Large vine with long stems hanging out of tree. Same vine coll. again, nearly ready to bloom, Dec. 21, 1974 sub # Nee 8929.

MO, 8621 moss. Leucobryaceae.
at 1.5 m. on Alchornea trunk. Common.

MO, , . 8622 Rub. Coccosypselum hispidum St. det. J.D. 1974
Creeping herb. Fruit bright blue.

MO. 8623 Hirtella

MO, , . 8624 Swartzia simplex (Sw.) Spreng det. R.L. 1974
Shrub 3 m. tall. Fruit orange.

MO, , , . 8625 Smilax lanceolata L.
vine. det. R. Liesner, 1975

MO. 8626 Heliconia irrasa
Herb 2 m. tall. Bracts orange, inflorescence erect.

MO. 8627 orchid. Polystachya
at 8 m. on tree branch.

MO. 8628 Pera arborea Mutis ! R.L. 1974
Tree 15 m. tall.

MO, , , . 8629 Lacmellea panamensis (Woods.) ~~Mgf.~~ Mgf. det. A.G. 1974
Tree 10 m. tall, 15 cm. dbh with sticky white latex. Fruit orange. "Fruta de mono"

Dec. 6, 1973

Canal Zone, Panamá

17PPA 077-081/276-8

C. argenteum Jacq. ssp. panamense Pittier

MO, 8. 8630 Chrysophyllum panamense Pittier det. Pennington, 1985
Tree 20 m. tall, 45 cm. dbh. With white latex. Fruit green. det. G. Pilz 1975

MO, " 8631 Orchid Sobralia
at 5 m. on tree

MO, " " 8632 Colubrina glandulosa Perkins var. glandulosa
Tree 20 m. tall, 60 cm. dbh. Flowers greenish, with sharp sweet odor.
det. M.C. Johnston 1974

17PPA 084/295

8633-8634 Roadside and open grassy area near Caribbean. 1½ km. SW of mouth of Chagres River, along road S-8. alt. < 5 m.

MO, 4. 8633 Hyparrhenia rufa (Nees) Stapf det. G.D. 1974

MO. " " 8634 Pennisetum purpureum Schumach " "

17PPA 083-5/289-291

8635-8648 Tropical moist forest along road S-8, at Quebrada La Furnia, 1½ km. SW of mouth of Chagres River. alt. 5-10 m.

MO, 5. 8635 Protium panamense (Rose) I.M. Johnst. det. T. Croat 1974
Tree 10 m. tall, 12 cm. dbh. Fruit green, turning red and splitting, red within.

Dec. 6, 1973

Canal Zone, Panamá
17PPA 083-5/289-91

MO, 8. 8636 Faramea occidentalis (L.) Rich. det. J. D. 1974
Small tree 8 m. tall, 10 cm. dbh. Fruit light green with reddish tinge.

MO, 7. 8637 * Psychotria marginata Sw. ! J. D. 1974
Shrub 1.5 m. tall. Fruit turning bright red, corolla pale yellowish.

MO, 5. 8638 Quassia amara L. ! T. C. 1974
Shrub 5 m. tall. Flowers bright pink.

MO, 10. 8639 Lacmellea panamensis (Woods.) Mgf. det. A. G. 1974
Tree 15 m. tall, 45 cm. dbh. Latex sticky, white. Fruit turning orange, edible, sweet, "fruta de mono".

MO. 8640 Annona spraguei Saff. ! R. L.
Tree 8 m. tall. Only one fruit seen, green.

MO, 5. 8641 Trichospermum mexicanum (DC.) Baill. ! R. L. 1974
Tree 10 m. tall. Petals blue, sepals pink.

8642-8648 at 5-6 m. on branches of Inga.

US. 8642 lichen graphid.
US. 8643 " " graphid.
US, . 8644 " " graphid.
US. 8645 " " graphid.
US, , . 8646 " " Sarcographa.
~~US~~ MO. 8647 moss Leucobryac.
F, , . 8648 hepat.
mixed.

Dec. 6, 1973

Canal Zone, Panamá
17PPA 173/242

8649-8653 At 1-2 m. on trunk of large cult. Swietenia near Gatún Dam. alt. 10 m.

US,	8649	lichen
US,	8650	" "
US,	8651	" "
US,	8652	" "
F,	8653	hepat.

Dec. 8, 1973

Canal Zone, Panamá
17PPA 128-137/175-180

8654-8680 Premontane wet forest area at headwaters of Río Providencia, 7.5 km. SW of Gatún Dam. alt. 25-140 m.

110, , , . 8654 Desmodium cajanifolium (HBK) DC. det. R.L. 1974
Slender, to 3 m. tall. Flowers blue to blue-green. In open areas.

MO, , . 8655 Dorstenia contrajerva L.
Gravelly area along old road through Heliconia maricae patch. det. J. Conrad, 1975

MO, , . 8656 Faramea luteovirens St. det. J.D. 1974
Shrub 5 m. tall.

US, , . 8657 Ramalina
Epiphyte fallen from canopy.

F. 8658 hepat
on rock.

MO. 8659 Clitoria portobellensis Beurl. det. R.L. 1974
Vine 3 cm. diam. Flowers on leafless lower part of stem, pink and white. Leaves not seen.

MO, 5. 8660 Mortoniodendron anisophyllum (Standl.) Standl. & Steyerm.
det. W. Meijer, 1985 Tree 9 m. tall, 15 cm. dbh. along stream. Fruit splitting, aril bright orange, seed black.

MO. 8661 ~~Aroid~~ Philodendron Karstenianum Schott
Vine on shrub. Spathe green, disintegrating, fruit white. det. T. Croat, 1975

MO, , . 8662 Myriocarpa yzabalensis (Donn-Sm.) Killip det. R.L. 1974
Shrub 3 m. tall. Common in disturbed areas, often larger.

Dec. 8, 1973

Canal Zone, Panamá
17 PPA 128-137 / 175-180

MO, . 8663 Campelia zanonia (L.) HBK. ! R.L. 1976

MO, , , . 8664 Fern. Thelypteris angustifolia (Willd.) Proctor
On rocks in stream. det. D.B. Lellinger 1977

MO, , . 8665 Triolaena hirsuta (Benth.) Triana det. R.L. 1974

MO, , . 8666 Sorocea affinis Hemsl. det. J.C. 1974
Shrub 3 m. tall. Inflorescence reddish.

MO, . 8667 Erythrina costaricensis M. Micheli det. B.A. Krukoff 1974
Shrub 6 m. tall, leafless.

MO, , , . 8668 Solanum hayesii Fern. ! D'Arcy 1974
Small tree 6 m. tall, 8 cm. dbh. with spines on main stem. Flowers with thick sweet odor, corolla white, anthers yellow.

MO, 5. 8669 Melastome Clidemia colling Gleason det. R.L. 1974
Shrub 1 m. tall. Fruit turning bright blue.

MO. 8670 Besleria notabilis Mort.
1 m. tall. Flowers orange.

MO, . 8671 Gram. Lasiacis oaxacensis (Steud.) Hitchc.
Along stream. var. oaxacensis det. G.D. 1974

MO, . 8672 Olyra latifolia L. " "
Along stream.

MO, , , , . 8673 Myrt. Eugenia zetekii Standl. det. R.L.
Shrub 4 m. tall.

8674-8680 Open much disturbed mortar ~~an~~ impact area.

MO, , . 8674 Piper aduncum L.
Shrub 2 m. tall. Spikes arching.

 Dec. 8, 1973

Canal Zone, Panamá

17PPA 128-137/175-180 (= Moghania strobilifera (L.) St. Hil. ex Jacks)

MO, , , . 8675 Flemingia strobilifera (L.) R.Br. det. R.L. 1974
Shrub 1.5 m. tall.

MO. 8676 ~~Sciotis~~ Tibouchina longifolia (Vahl) Baill.

MO, , , . 8677 Hyparrhenia rufa (Nees) Stapf det. G.D. 1974

MO, . 8678 Isertia haenkeana DC. det. J.D. 1974
Shrub 1.5 m. tall. Inflorescence red, corolla orange at base, yellow distally.

MO, . 8679 Banara guianensis Aubl.
Shrub 4 m. tall.

MO, , . 8680 Casearia sylvestris Sw.
Small tree 4 m. tall.

Summary of M. Lee collections from Panama, 1973.

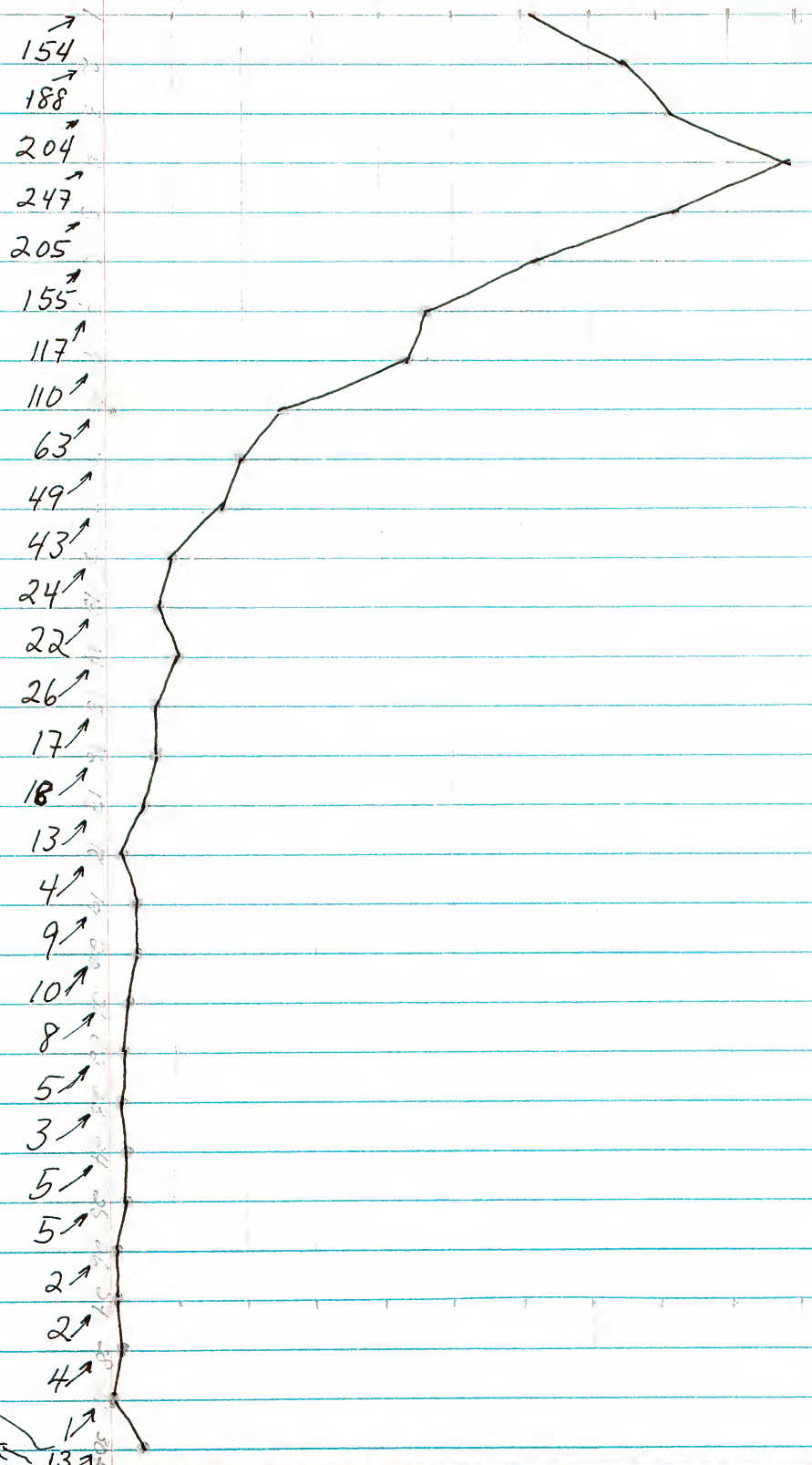
6525-9132, Aug. 18, 1973 - Dec. 30, 1973

total #'s of vascular plants = 1726
#'s of bryophytes & lichens = 881
2607

for vascular plants: (see graph →)

$\bar{X}$ = 6.2 dupl./#
mode = 4 dupl./#

total number of sheets = 10751



30+includes 30(2), 31, 32(2), 33(2), 34, 36(2), 37, 43, 44.

3315